



**Wyoming
Strategic Highway
Safety Plan
2022**

Acknowledgements

This plan was created through the efforts of members of the Wyoming Department of Transportation (WYDOT) Safety Management System (SMS) Committee and in collaboration with Highway Safety Data Analysis staff. Photographs provided by WYDOT unless otherwise noted.

The contributing Committee members are:

Keri Bohlmann, P.E.	Safety Management Engineer, WYDOT
Jeff Brown, P.E.	State Highway Development Engineer, WYDOT
Matt Carlson, P.E.	State Highway Safety Engineer, WYDOT
Jennifer Corso	GIS/Data, Cheyenne Metropolitan Planning Organization
Michelle Edwards, P.E.	District Traffic Engineer, WYDOT
Gina Espinosa-Salcedo	Regional Administrator, National Highway Traffic Safety Administration
Scott Gamo, Ph.D.	Environmental Services Manager, WYDOT
Aaron Koehler	EMS Unit Manager, Wyoming Department of Health (WDH)
Karson James	Highway Safety Behavioral Grants Program Manager, WYDOT
Sara Janes-Ellis	Local Government Coordinator, WYDOT
Kent Ketterling, P.E.	State Field Operation Engineer, WYDOT
Renee Krawiec	Deputy Program Manager, Driver Services, WYDOT
Khaled Ksaibati, Ph.D., P.E.	Director, Wyoming Technology Transfer Center, University of Wyoming
Kyle McKay	Lieutenant, Safety and Training, Wyoming Highway Patrol (WHP)
Joel Meena, P.E.	State Traffic Engineer, WYDOT
Jay Ostby	Licensing Officer, Reporting and Data Analyst, WDH
Dan Tolman	IT Program Manager, WYDOT
Tom Wilcoxon	Federal Motor Carrier Safety Administration Representative
Mark Wingate, P.E.	State Planning Engineer, WYDOT
Dustin Woods, P.E.	Senior Area Engineer, FHWA
Tim Young	Executive Director, Wyoming Pathways

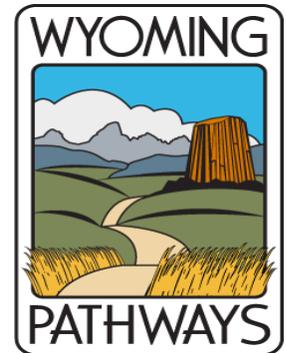


Wyoming
Department
of Health

Commit to your health.



WHP
Wyoming Highway Patrol



Adopted: April 15, 2022

Matthew D. Carlson, P.E.
State Highway Safety Engineer
Wyoming Department of
Transportation

K. Luke Reiner
Director
Wyoming Department of
Transportation

TABLE OF CONTENTS

INTRODUCTION AND BACKGROUND	1
HIGHWAY SAFETY OUTCOME ROADMAP	5
WYOMING HIGHWAY SAFETY STRATEGIES	7
EMPHASIS AREAS	11
Lane or Road Departure Crashes	11
Use of Safety Restraints	13
Impaired Driving	15
Speeding or Driving Too Fast For Conditions	17
Curve Crashes	19
Young Drivers	21
FOCUS AREAS	23
Intersections	23
Active Transportation: Pedestrian and Bicycle Modes	24
Distracted Driving	26
Icy/Snowy Roads	27
Commercial Motor Vehicles	28
Motorcycles	29
Older Drivers	30
Wildlife	31
Work Zone Safety	32
LOCAL COORDINATION EFFORTS	33
SYSTEMIC TREATMENTS	34
CONTINUING HIGHWAY SAFETY AREAS	35
HIGHWAY SAFETY ENABLERS	37
DEFINITIONS	40
APPENDIX – SUPPORTING DATA AND INFORMATION	44

Introduction and Background

Numerous state, federal, and local agencies strive to reduce critical crashes in Wyoming. A critical crash is defined as a crash where a suspected serious injury or fatality occurs. The Strategic Highway Safety Plan (SHSP) is the guiding document in Wyoming’s effort to achieve the national goal of “Towards Zero Deaths” and to ensure that motorists, pedestrians, and bicyclists using roadways in the state are safe and arrive at their destination.

The SHSP is a major component and requirement of both the Highway Safety Improvement Program (HSIP) (23 U.S.C. § 148) and the Highway Safety Plan (HSP) submittal. It is a safety plan compiled by a statewide coordinated effort and provides a cohesive and comprehensive framework intended to reduce critical crashes on Wyoming roadways. The purpose of the SHSP is to identify Wyoming’s key safety needs and guide investment decisions toward choosing the most effective strategies and countermeasures focused on saving lives and preventing injuries.

On December 4, 2015 President Obama signed the Fixing America’s Surface Transportation (FAST) Act into law — the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment, authorizing funding in federal fiscal years 2016 through 2020. On November 15, 2021 President Biden signed the Bipartisan Infrastructure Law (BIL) — the largest long-term investment in surface transportation infrastructure planning and improvement in nearly a century, authorizing funding over fiscal years 2022 through 2026. Both the FAST Act and BIL provide funding for highways; highway safety and motor vehicle safety; public transportation; motor carrier safety; hazardous materials safety; rail; and research, technology, and statistics programs allowing states and local governments to advance critical transportation projects with the confidence that federal funding will be available.

The Wyoming Department of Transportation, along with a committee of local, state, federal, and private-sector partners, developed the SHSP. This plan was implemented in 2008 and continues to be regularly updated. This 2022 update will continue to focus on data-driven strategies that take a multi-year comprehensive approach to establish statewide goals, emphasis areas, and objectives to collectively address Wyoming’s traffic safety challenges.



Plan Purpose

The purpose of this SHSP is to steer the state of Wyoming “Towards Zero Deaths”. All travelers in the state of Wyoming, whether they drive, ride, walk, or bike should safely arrive at their destination. The Wyoming SHSP strives to work towards this goal.

This plan is written to actively guide the strategies the state will take to achieve the goal of zero traffic fatalities. State and local agencies, counties, private-sector partners and non-profit organizations, corporations, residents, and visitors to the state of Wyoming all benefit from a safe and efficient roadway system.

Plan Development

There are four main processes forming a cycle related to the SHSP: Coordination, Implementation, Evaluation, and Revision. The process is vital to the success of reducing critical crashes in Wyoming.



Coordination

Meeting the goal of reducing all crashes, especially critical crashes, is a shared responsibility. To help achieve this goal, WYDOT has created strategic partnerships with safety partners throughout the state. Cooperation and communication between key local, state, and federal agencies, as well as our safety advocates and safety organizations, is paramount to facilitate the implementation and deployment of the strategies with the highest pay-off in terms of reducing critical crashes.

Implementation

The SHSP is a collective effort of transportation agencies, highway safety advocates, and safety partners throughout the state. The SMS committee supports the SHSP and encourages safety partners to focus their safety activities and programs in a way that supports the safety goals in the most efficient manner possible.

Evaluation

The effectiveness of the strategies developed from the guidance in the SHSP is evaluated through performance measures and program review activities. The success of the SHSP is judged based on key performance measure of reducing the number of annual critical crashes.

Revision

Upon evaluation and review, the SHSP guidance is revised as necessary to meet the evolving challenges presented by an ever-changing transportation system in the state of Wyoming.

Performance Based Approach

States are required to establish a performance-based approach to highway safety. The SHSP is a key component to this performance-based approach. The Wyoming SHSP will continue to support performance-based goals that are consistent with the safety performance measures established by the Federal Highway Administration (FHWA) and by the National Highway Traffic Safety Administration (NHTSA) in accordance with 23 U.S.C. 150. Wyoming is required to set annual targets for safety performance measures to carry out the Highway Safety Improvement Plan (HSIP) and the Highway Safety Plan (HSP). The SHSP goals are independent of the HSIP and HSP targets.

The SHSP is a multi-year document and is ambitious in nature. A “Towards Zero Deaths” goal is an example.

The Key Factors of Highway Safety Practices

Enforcement

The SHSP helps drive enforcement strategies to ensure that Wyoming motorists, pedestrians, and bicyclists can enjoy a safe experience on roadways. Strategies such as targeted DUI, safety equipment use, and speeding enforcement are implemented based on the recommendations of the SHSP.



Engineering

The SHSP is instrumental in guiding engineering practices to reduce critical crashes on Wyoming roadways. Treatments such as rumble strips, animal overpasses, enhanced signage, delineation enhancements, enhanced pavement markings, and improved guardrail are driven by the data collected and are implemented in accordance with the SHSP’s guidance.

Education

Campaigns to educate the travelling public are driven by the SHSP to determine the best use of limited highway safety funding and resources. Educational efforts with the highest returns on investment are identified and pursued by evaluating data.

Emergency Medical Services (EMS)

Better correlation between crash data and EMS data is essential to quantifying the costs of critical crashes to the health care system and the economy. The SHSP helps support improvements in the quality of EMS in Wyoming.



Everything Else

Falling under this category are WYDOT operations (such as snowplowing, fence repair, and work zones), pedestrian and bicycle advocacy groups, the Department of Health, safety organizations, Wyoming employers, commercial motor carriers, and the Wyoming Department of Workforce Services. The SHSP strives to include these and other highway safety partners.

Plan Process Description

WYDOT consults regularly with its safety partners and seeks their input prior to proceeding with any updates regarding the SHSP. All safety partners are afforded the opportunity to be involved in the SHSP revision process.



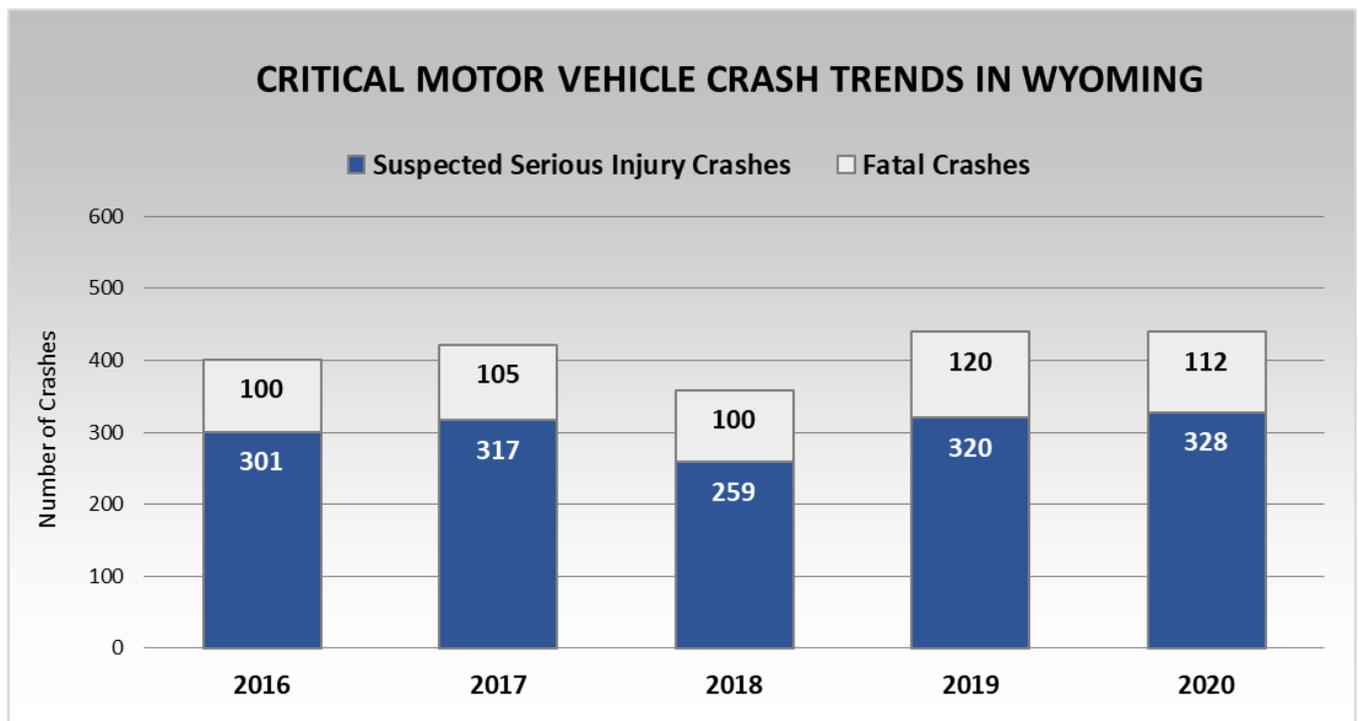
The Wyoming Department of Transportation aligns long term plans of the SHSP with the most immediate goals of the HSIP and HSP. The SHSP guides many of the processes of the HSIP and the HSP.

Emphasis and focus areas for the SHSP are identified by the Safety Management System (SMS) Committee. The Wyoming SMS Committee will meet, discuss, and approve all updates and revisions to be considered. The SHSP's data-driven approach analyzes trends in traffic safety

and identifies the most effective actions to reduce critical crashes on Wyoming roadways.

A major overhaul for the Wyoming crash form was completed in 2008. This facilitated a sweeping change in the way crash data was collected.

The following chart outlines the trend in critical crashes in the state of Wyoming:



Highway Safety Outcome Roadmap

The next two pages provide a roadmap designed to define the strategies used to achieve the goal of reducing Wyoming’s critical crashes and the potential outcomes of these strategies.

THE DESTINATION: GOAL
REDUCE THE FREQUENCY AND SEVERITY OF CRASHES IN WYOMING.

The plan to get there:



STARTING LINE: STRATEGIES Steps Wyoming can take to reduce critical crashes.	
<ul style="list-style-type: none">• Inform court system of safety measures.• Perform targeted enforcement campaigns.• Incentivize safe driving behavior.• Meet requirements to obtain federal funding.• Refine the Safety Management System.• Identify and flag worst safety locations.• Implement pre-STIP project selection tool.• Implement internal performance measures.• Collect and share the appropriate vehicle-related crash data with FHWA, NHTSA, and others.• Identify appropriate safety treatments for worst safety locations.	<ul style="list-style-type: none">• Consider push for vehicle safety requirements and inspections.• Understand effectiveness of various approaches and treatments.• Support the programming of optimal safety treatments (stand-alone, combined, and systemic).• Enhance enterprise data SPOD (process, governance, data sets).• Engage cross-entity (5E) forums to identify safety strategies.• Perform targeted awareness / education campaigns.



THE JOURNEY: INTERIM OUTCOMES

Short and long-term results that Wyoming can expect if strategies are implemented.

- | | |
|---|--|
| <ul style="list-style-type: none"> • Penalties for drivers exhibiting risky behaviors are effective (both likely and significant). • Benefits for drivers exhibiting safe behaviors are effective (both likely and significant). • Drivers are aware of behavior risks, possible penalties of risky behavior, and potential benefits of safe behavior. • Funding sources are in place and predictable. • Agencies and partners are aligned to achieve aggressive safety goals. • Effect use of communication channels. • Legal system is aligned on traffic safety. • Optimal (highest benefit and/or cost) safety treatments are identified for worst locations. • Appropriate tools are in place to analyze and present information. • Access to applicable data (of appropriate quality) is available. • Drivers internalize the benefits of not engaging in risky behaviors (the carrot). • Possible penalties deter drivers from engaging in risky behavior (the stick). • Up-to-date, reliable, actionable information available to drivers. • Public interest and engagement. • Appropriate legal support. • Adapted social mores. • Vehicles are designed and built safely. • Vehicle safety features are maintained. • Adequate funding is allocated for safety treatments. • Investments are optimized to meet targets. | <ul style="list-style-type: none"> • Investment decisions are based on data rather than political pressure. • Adequate emergency response capacity is in place at right locations. • Performance-based management. • Adequate funding is allocated for weather operations. • Maintenance operations anticipate and respond to inclement weather conditions. • Emergency response dispatch operations are coordinated and integrated. • Drivers follow the speed limit, wear their seatbelt, and drive unimpaired, focused, and alert. • Drivers adapt / avoid driving in response to weather / roadway conditions. • Vehicles on the road are safe. • Highest benefit-to-cost roadway / roadside safety treatments are in place in the network. • Drivers are aware of pedestrians and bicyclists, and share the road safely. • Injury surveillance system provides rapid, appropriate emergency response to crash events, and appropriate care to minimize injury severity. • Roadway operations minimize the negative impacts of weather, congestion, construction, etc. on traffic safety. |
|---|--|

Wyoming Highway Safety Strategies

Increase Seatbelt Use with Risky Behavior Groups

2020 Wyoming crash data reports that 83% of motor vehicle occupants who were involved in a crash properly used their seatbelt. This level is consistent with Wyoming crash data from previous years (2019, 83%; 2018, 84%).

In 2020, seatbelt use compliance for drivers and passengers varied significantly by county. Converse County had the highest proportion of drivers involved in a crash who properly used restraints (92%) while Hot Springs County led the state with 100% of passengers involved in a crash properly using seatbelts. Conversely, Sheridan and Washakie Counties were tied for last place with only 70% of drivers involved in crashes properly using restraints. When the use of restraints by passengers was examined, Carbon County came in last with just over half (57%) properly using restraints. Total crashes by county, coupled with small populations and major travel routes/tour destinations, may bias these results.



A rural population presents challenges to safety on Wyoming's roadways. Many of the highest risk groups for seatbelt use are difficult to reach as a result of Wyoming's largely rural nature. Impaired drivers and young adult drivers are two of the groups least likely to wear a seatbelt. This plan aims to address this issue and increase seatbelt use in Wyoming.

Increase Law Enforcement Coordination



Coordination between highway safety partners is imperative to the successful implementation of the strategies in the SHSP. Coordination with law enforcement is essential since they have unique advantages when it comes to influencing drivers' behaviors. Wyoming's rural nature presents great challenges to law enforcement. Long distances between towns and sparsely spaced law enforcement resources make risky behaviors more appealing to drivers. By coordinating with law

enforcement and concentrating on the most effective strategies such as focusing patrol and enforcement efforts in high-risk corridors, Wyoming safety partners will be more effective in reducing critical crashes in the state.

Evaluate Appropriate Infrastructure Improvements (Systemic)

Many options exist when evaluating highway safety improvements. Some options are much more effective than others in regards to the return on investments. By evaluating these options, Wyoming will be able to better determine which strategies will prove to be the most fruitful. With limited resources and projected declining state revenues in the near future, Wyoming must be careful and deliberate in the way it chooses to proceed with infrastructure improvements.

Change Traffic Safety Culture



By expanding and developing new focused public education, safety culture surrounding motor vehicles, pedestrians, and cyclists can be improved. For example, Wyoming motor vehicle occupants involved in crashes in 2020 had a seatbelt usage rate of 83%, but when fatalities in 2020 were examined, 47% involved an unbuckled driver or occupant. While this total continues to be high, steady declines have been observed since 2016, when 68% of fatalities involved an unbuckled occupant. Fatalities can be avoided with the use of safety equipment in many cases and focusing education efforts in this area is one strategy that can prove effective. In addition, public education focusing on pedestrian and cyclist roadway users may help to reduce critical injuries

for these vulnerable road users. It is the intent of this document to guide these efforts.

Reduce Substance Abuse/Impaired Crashes

While alcohol-involved crashes only account for 6% of total crashes, alcohol-involved fatalities account for 30% of all motor vehicle fatalities in the state of Wyoming in 2020. The aim of the SHSP is to explore methods to reduce this number. Alcohol-involved crashes also account for about 12% of total injuries on Wyoming roads. Without alcohol-involved crashes, there may have been 38 fewer fatalities and 359 fewer injuries on Wyoming roadways in 2020.



Improve Roadway Visibility

Approximately 32% of the motor vehicle crashes in Wyoming in 2020 occurred in the dark. Over three-quarters of these (78%) were in darkness conditions with no lighting. Given Wyoming's rural nature, this is not surprising. However, several techniques have proven effective in reducing these numbers. Making marking and signage more visible, and improving roadway user visibility are examples of strategies that can be effective if implemented correctly. This plan is, among other things, intended to guide the adoption of strategies to increase roadway visibility.

Improve Areas with Increased Speed Limits



Recently, portions of a number of the highways running through Wyoming have experienced increased speed limits. Segments of the three interstate highways running through Wyoming have increased from 75 to 80 miles per hour and sections of state highways have increased from 65 to 70 miles per hour. Excessive speed was reported to be a factor in approximately 20% of all motor vehicle crashes in Wyoming in 2020.

Align the Legal System on Traffic Safety

In order to reduce the number of critical crashes, the legal system must be aligned with highway safety goals. For instance, there is compelling data showing that primary seatbelt laws reduce critical crashes. Passing and enforcing such laws encourages more people to use their safety equipment. Distracted driving is a growing concern in Wyoming and there are very few laws and city ordinances regarding driving while distracted. By encouraging the legal system to recognize these dangers, Wyoming can see a reduction in critical crashes. Having the legal system in line with Wyoming's roadway safety initiative has the potential to reduce critical crashes. There are many strategies being implemented nationwide with varying results. Some strategies such as increasing education, ignition interlock for DUI offenders, and primary seatbelt laws are showing promising results. Wyoming's goals can never be realized without the assistance of the legal system.



Use of Communication Channels Effectively

Emergency responses to crashes in Wyoming can be difficult. Vast distances and a low population density present unique challenges. Wyoming drivers involved in crashes can face long response times. First responders must be able to reach the crash scene as quickly as possible. Weather conditions, road conditions, and distance can affect the time it takes for a responder to arrive. Wyoming can experience crashes involving multiple vehicles that close major arteries through the state. Wyoming has experienced many of these due to weather conditions adversely affecting the road conditions. Wyoming has communication channels in place to mitigate the effects of these conditions. Variable message signs are one example of how information can be relayed to drivers quickly. The use of these systems can always be improved and this plan aims to explore ways in which communication channels in place can be more effectively used to reduce fatal and critical crashes.



Provide Up-to-Date, Reliable, and Actionable Information to Drivers

Conditions in Wyoming can change at a moment's notice. Relaying this information to drivers is essential. Allowing drivers the information needed to adapt to changing road conditions, anticipate road conditions based on weather, and to plan their trips accordingly can make notable progress towards reducing the number of critical crashes. Relaying this information as quickly as possible to drivers can allow drivers to completely avoid behaviors and conditions that cause critical crashes.



Emphasis Areas

Emphasis Areas are areas of primary focus for critical crash prevention treatment that have been identified as an area of concern with large numbers of critical crashes (a *major* contributor to critical crashes). Emphasis areas are given priority when exploring safety treatments.

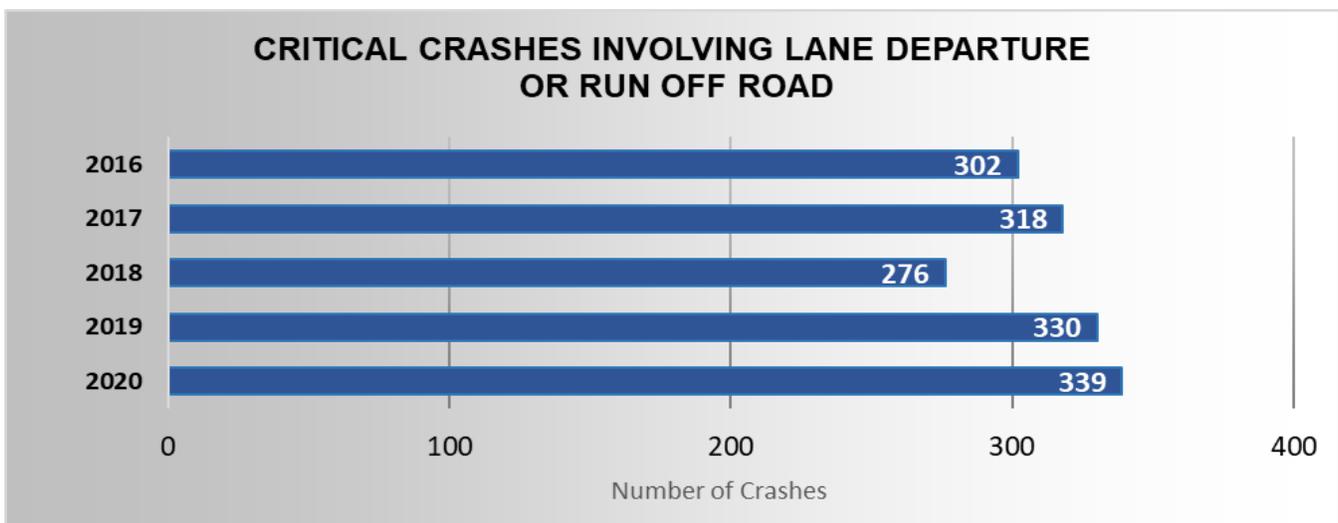
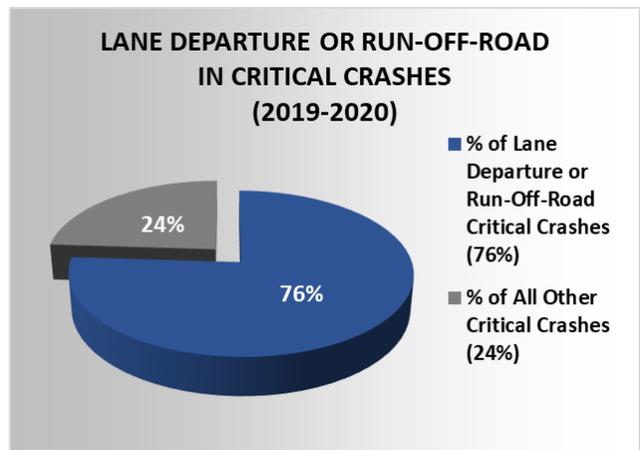


Lane or Road Departure Crashes

Lane or road departure crashes include those events when a vehicle leaves its lane or runs off the road, opposite direction crashes, sideswipe crashes and head-on collision crashes. They are the leading cause of crashes in Wyoming.

The Challenge

In Wyoming, for the years 2019-2020, 76% percent of all critical crashes were associated with lane or road departure. Often these crashes are the result of driver fatigue, impaired driving, speeding, or distracted driving. While the crash begins with driver error, improved delineation, tactile reminders, and a forgiving roadside treatment can often reduce in the number of crashes.



Key Strategies: Lane and Road Departure

Enforcement

- Align legislative action with safety goals
- Provide accurate information to lawmakers
- Increase law enforcement's ability to perform targeted enforcement in areas with high rates of critical crashes

Engineering

- Install rumble strips or stripes
- Add and improve shoulders
- Eliminate edge drop-offs
- Expand and maintain roadway visibility
- Install technology to keep drivers informed of conditions ahead

Education

- Increase education among roadway users about the dangers of distracted driving and driving under the influence.
- Increase awareness of road conditions as they change
- Increase awareness of changing weather conditions as they change

Emergency Medical Services

- Develop a system to share crash and injury data between highway safety and healthcare entities
- Support the improvement of emergency response times



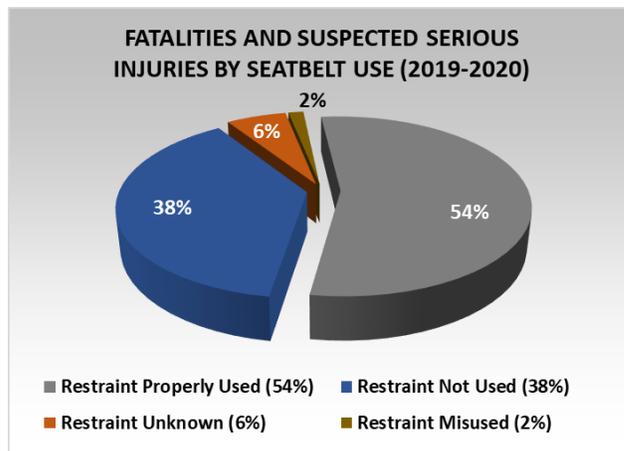
Use of Safety Restraints

Seatbelt usage in Wyoming, based on observation studies and crash analysis, is encouraging but additional efforts are needed to get all drivers and passengers to utilize safety restraints. Safety restraints are the best way for users of the roadway system to protect themselves and their families from the poor decisions and actions of other drivers.

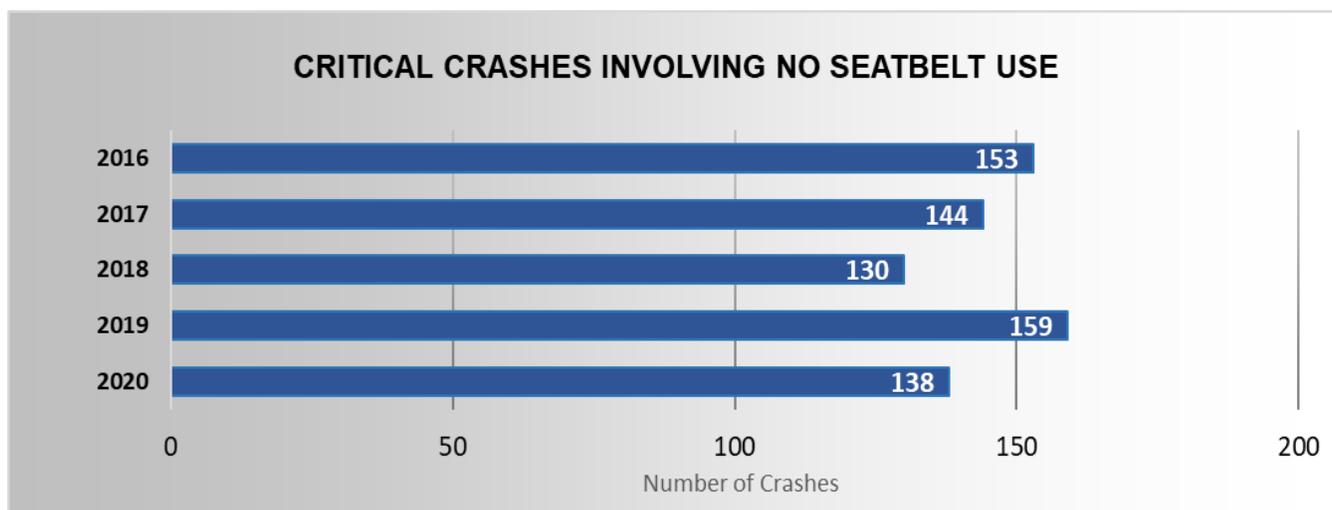
The Challenge

In 2020, the observed seatbelt use for vehicle occupants in the state was 83%; an increase from 2019 when seatbelt use was observed to be 78%.¹

Data from 2019-2020 report that 34% percent of critical crashes involved a person not wearing a seatbelt. Just over half (54%) of individuals who experienced a fatal or suspected serious injury on Wyoming roads in 2019-2020 used their safety equipment properly. Thirty-eight percent (38%) used no restraint, 2% misused their safety equipment, and for 6% restraint usage was unknown.



According to the National Highway Traffic Safety Administration (NHTSA), if you buckle up in the front seat of a passenger car, you can reduce your risk of fatal injury by 45% and significant injury by 50%. If you buckle up in a light truck, you can decrease your risk of fatal injury by 60% and significant by 65%.²



Data regarding seatbelt usage is derived from the Investigator's Traffic Crash Report. It includes person types of driver and passenger only. It excludes the following vehicle types where seatbelts are not normally equipped: motorcycles, off road motorcycles, farm equipment, construction vehicles, mopeds, snowmobiles, ATVs, MPVs, motorized skateboards/scooters, pedestrian vehicles (i.e. wheelchairs), low speed vehicles, and segway-style devices. "Not Used" also includes "Not Available".

¹ 2020 Wyoming Statewide Seatbelt Survey Data Analysis. Accessed 04/15/2021 at http://www.dot.state.wy.us/home/dot_safety/behavioral-grants.html

² National Highway Traffic Safety Administration. Accessed 02/19/2021 at <https://www.nhtsa.gov/risky-driving/seat-belts>

Key Strategies: Use of Safety Restraints

Enforcement

- Aggressively enforce the occupant protection component of current laws
- Aggressively enforce child safety laws

Engineering

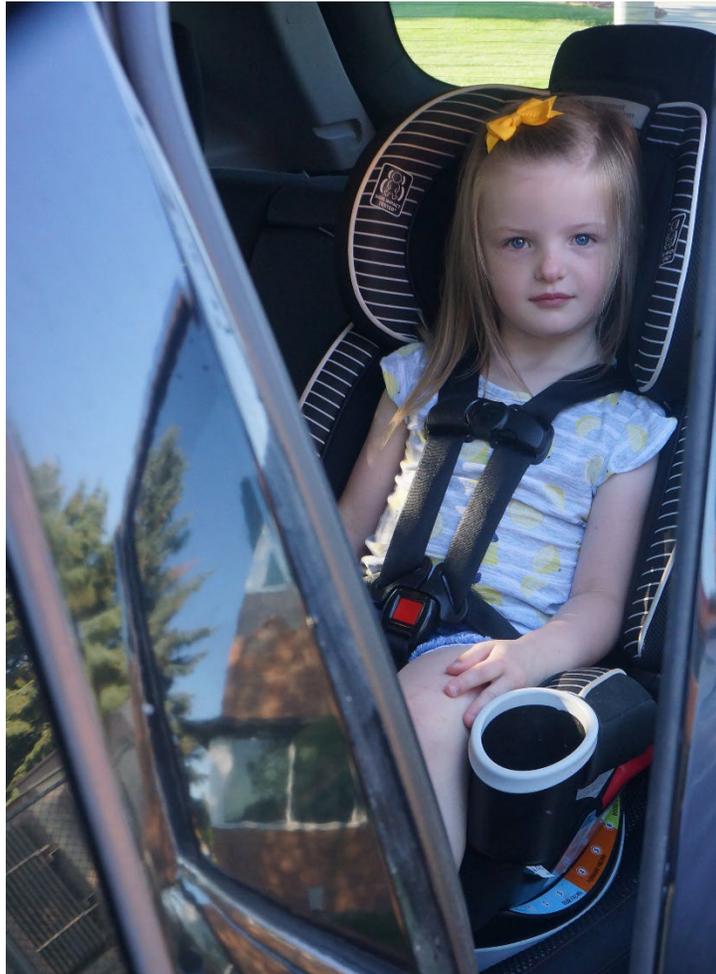
- Increase the use of available technologies to encourage the use of safety restraints
- Use overhead signs to encourage the use of safety restraints

Education

- Educate parents, caregivers, and grandparents about proper selection and installation of child safety and booster seats
- Encourage law enforcement agencies to certify more officers as Child Passenger Safety Technicians
- Continue to educate the general public and target groups (e.g. young drivers) about the importance of occupant protection
- Continue to educate the public about child safety laws

Everything Else

- Enact a primary seatbelt law
- Encourage communities to adopt local primary seatbelt ordinances



Impaired Driving

Impaired driving refers to drivers that may be under the influence of alcohol, illegal drugs, or prescription medications. The majority of impaired driving crashes in Wyoming include alcohol use.

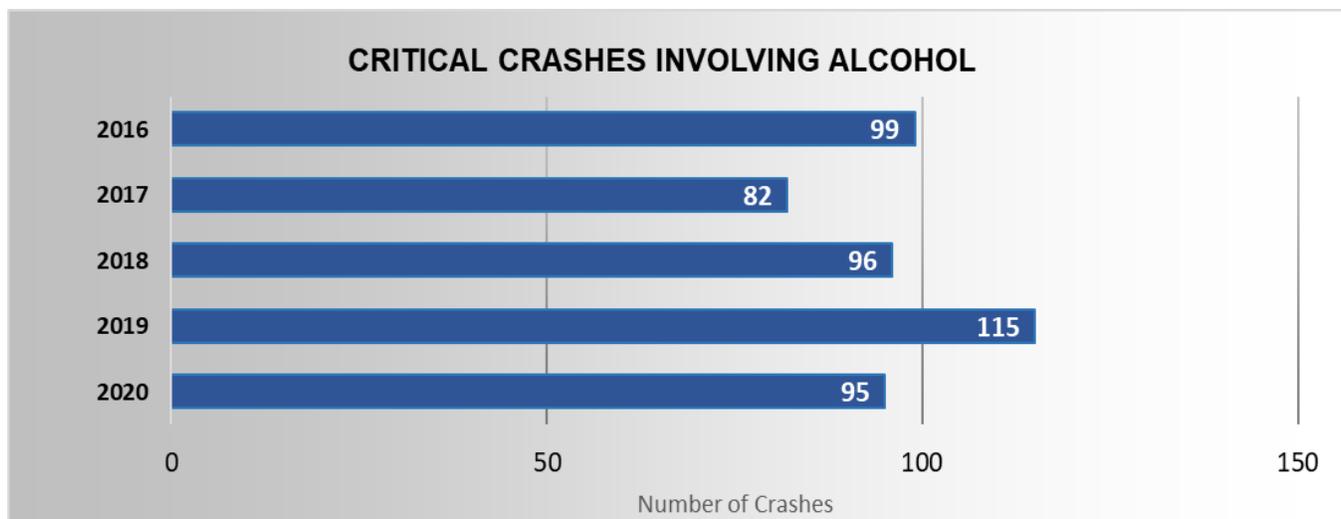
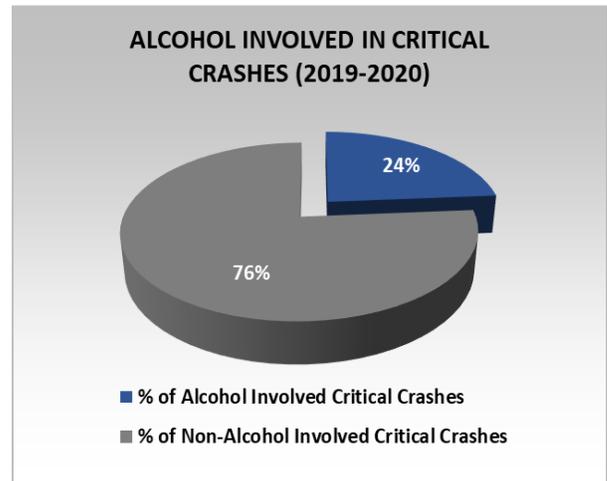
Alcohol-involved crashes are those crashes in which at least one driver or non-motorist was suspected of alcohol use (no test results available) or tested positive for any level of alcohol using a breathalyzer or alcohol blood/urine test. While some alcohol-involved crashes are the result of an impaired non-motorist with sober drivers, the majority involve at least one impaired driver.

In Wyoming, drivers with a blood alcohol concentration (BAC) of 0.08% or higher are considered alcohol-impaired by law. The legal limit of intoxication for Commercial Motor Vehicle drivers is a BAC of 0.04%.

The Challenge

In 2019-2020, 24% percent of critical crashes involved alcohol and nearly a third (31%) of fatal crashes involved alcohol. In the same two-year period, alcohol-involved crashes accounted for 31% of all motor vehicle-related fatalities and 11% of all motor vehicle-related injuries in Wyoming.

In Wyoming, sobriety checkpoints are illegal under the interpretation of the Roadblock Statute (WY Stat § 7-17-102). This adds additional pressure on law enforcement to detect impaired drivers as they are driving. Additionally, ignition interlock devices are not mandatory for an offender unless the individual has multiple convictions or has had a blood alcohol concentration of 0.15% or greater.



Key Strategies: Impaired Driving

Education

- Educate roadway users, business owners, and alcohol servers on the dangers of substance-impaired driving
- Continue programs aimed at target groups (e.g. young drivers) to educate them on the dangers of impaired driving (i.e. Alive at 25)
- Continue to encourage law enforcement agencies to keep training officers on the dangers of impaired driving and the latest detection methods aimed at stopping impaired driving

Enforcement

- Encourage multi-agency initiatives and task forces to identify effective areas for targeted DWUI enforcement
- Continue addressing enforcement options for marijuana coming into Wyoming from neighboring states

Everything Else

- Continue to advocate for harsher penalties for impaired driving
- Advocate for tougher immediate sanctions for drivers who drive while impaired (i.e. ignition interlock devices)



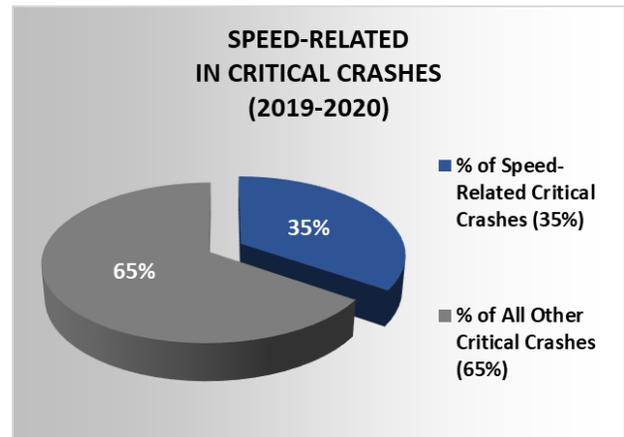
Speeding or Driving Too Fast For Conditions

Speeding or driving too fast for conditions are predominately behavioral-based problems that can be decreased by law enforcement and educational efforts. Engineering factors also need to be considered when addressing speed as a factor.

In 2014 Wyoming began to increase speed limits on sections of interstate highway and segments of state highways throughout the state, allowing drivers to travel even faster on Wyoming roadways. Motorists can legally drive 80 MPH on nearly 500 miles of rural interstate highway throughout the state.

Speeding can be considered in two ways:

- 1) exceeding the posted speed limit and
- 2) driving too fast for the conditions of the roadway, which may be influenced by weather or other environmental factors.

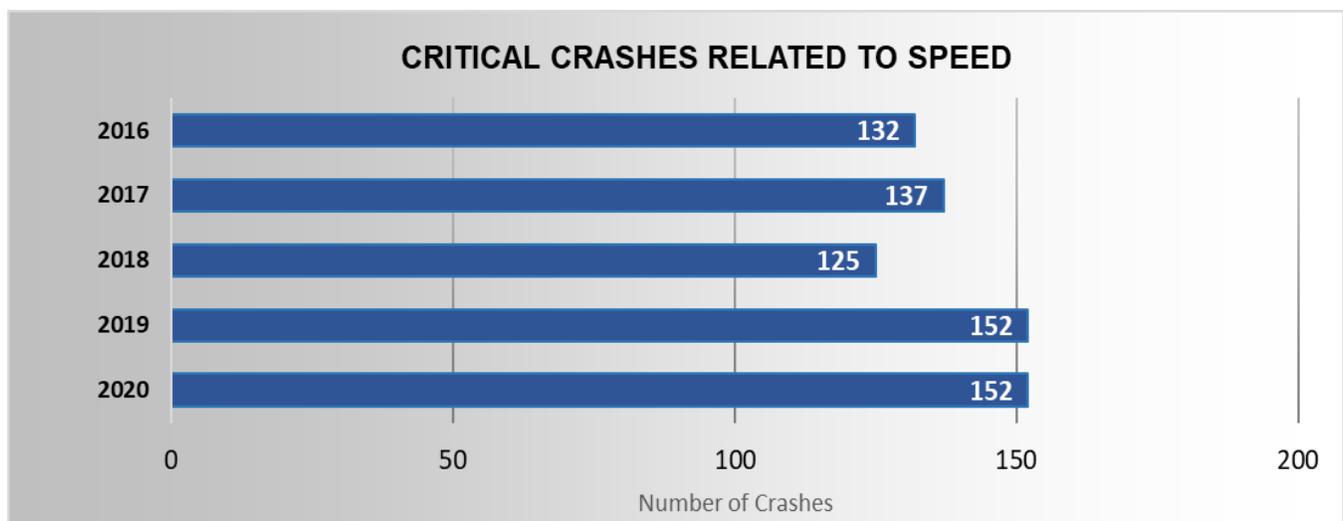


The Challenge

Speeding or driving too fast for conditions have been identified as components of 304 critical crashes that occurred in 2019-2020, or 35% of critical crashes.

The rural nature of Wyoming highways make risky behaviors more appealing to drivers and presents a challenge for law enforcement due to the long distances between urban areas and sparsely spaced resources.

In addition, Wyoming faces quickly changing weather conditions, which may adversely affect road conditions. While considering speed-related crashes, the posted speed limit may not have been exceeded, but the driver may have been driving too fast for the weather/road conditions at the time, which may have impaired the driver's ability to safely control their vehicle.



Key Strategies: Speeding or Driving Too Fast for Conditions

Enforcement

- Increase targeted enforcement on high-incident corridors
- Increase the use of visible enforcement programs
- Encourage the continued use of speed monitoring systems

Engineering

- Expand the use of variable messaging signs and variable speed limits in areas with high levels of incidents
- Expand communication with drivers to alert them of changing road or weather conditions
- Identify appropriate speed limits for local roads

Education

- Continue to make drivers aware of the dangers of reckless driving and the dangers of speeding
- Educate drivers and motorcycle riders to be aware of vulnerable road users (pedestrians and bicyclists) along and crossing roadways, especially in suburban areas.
- Educate drivers and motorcycle riders about the challenges of operating motor vehicles in adverse weather conditions
- Educate drivers and motorcycle riders about the dangers of aggressive driving



Curve Crashes

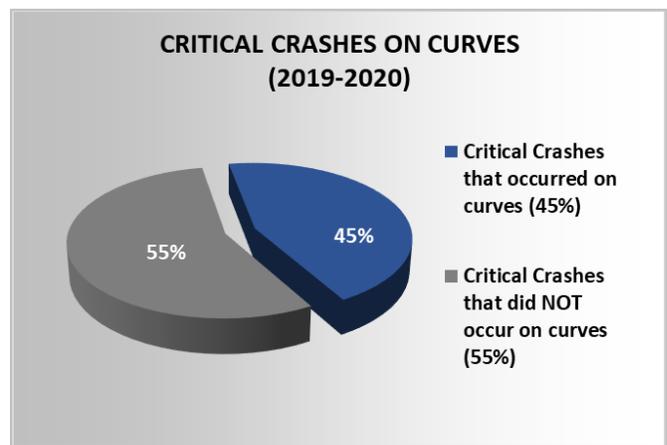
Curves are a horizontal geometric feature of a roadway that changes the alignment or direction of the road. Critical crashes are frequently associated with a horizontal curve feature, and the majority of these crashes are roadway departures. Most curve-related critical crashes involve single vehicles leaving the roadway and striking trees, utility poles, or other fixed objects, or overturning.

Many roadway departure countermeasures are effective when applied specifically at horizontal curves. A focus on horizontal curves can prove to be a cost-effective approach to reducing roadway departure crashes, as many of these countermeasures are low-cost and can be installed at prioritized horizontal curves to address safety issues. Proper attention to the factors involved with crashes occurring on horizontal curves can point to the potential benefits of various countermeasure options.

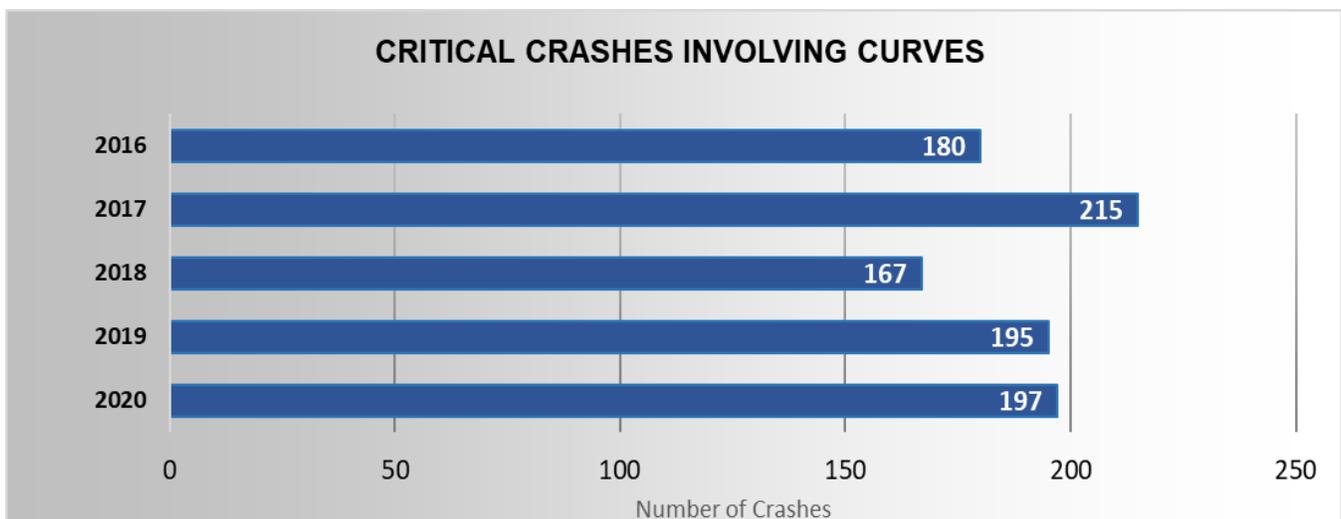
The Challenge

For the years 2019-2020, 392 critical crashes were associated with horizontal curves, or approximately 45% of critical crashes.

These crashes are not just occurring on sharp or deficient curves, but are also occurring on curves that meet most, if not all, current design standards. For more detailed information on horizontal curve associated crashes see Appendix, page 46.



Contributing factors to both the frequency and severity of horizontal curve associated crashes may include other emphasis or focus areas, such as lane or road departure, speed-related, impaired driving, distracted driving, and icy/snowy roads.



Key Strategies: Curve Crashes

Enforcement

- Increase targeted enforcement on high-incident corridors

Engineering

- Install centerline and edge line rumble strips/stripes
- Upgrade and improve shoulder treatments
- Expand and maintain roadway visibility features (e.g. pavement markings and curve signs)
- Increase roadway lighting
- Remove fixed objects hindering visibility when possible
- Rebuilding curves to meet design standards (e.g. radii and superelevation).

Education

- Train and educate roadway users to properly negotiate curves
- Use media to educate roadway users about potential dangers associated with curves

Emergency Medical Services

- Improve emergency response time in rural areas through better planning and communication

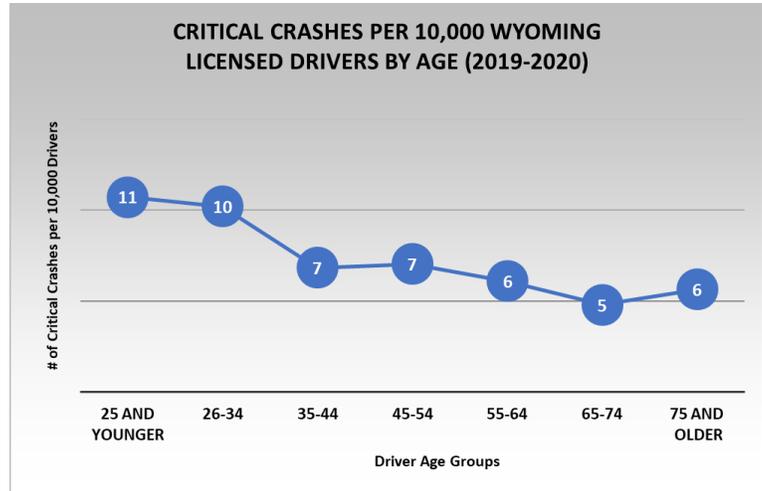
Evaluate

- Appropriate roadway surface friction treatments

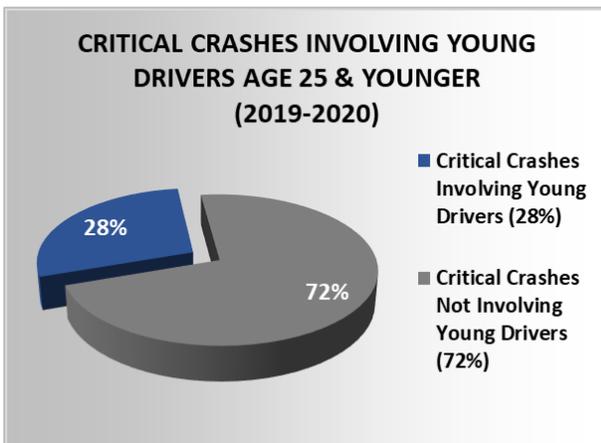


Young Drivers

Critical crashes tend to occur more frequently in the young driver (age 25 years or younger) portion of the driving population. Young drivers are inexperienced and can show poor judgement in the face of external circumstances such as inclement weather, night-time driving, and peer pressure. Properly training and educating young drivers about safe driving practices and potential roadway dangers can help to reduce critical crashes in the state.



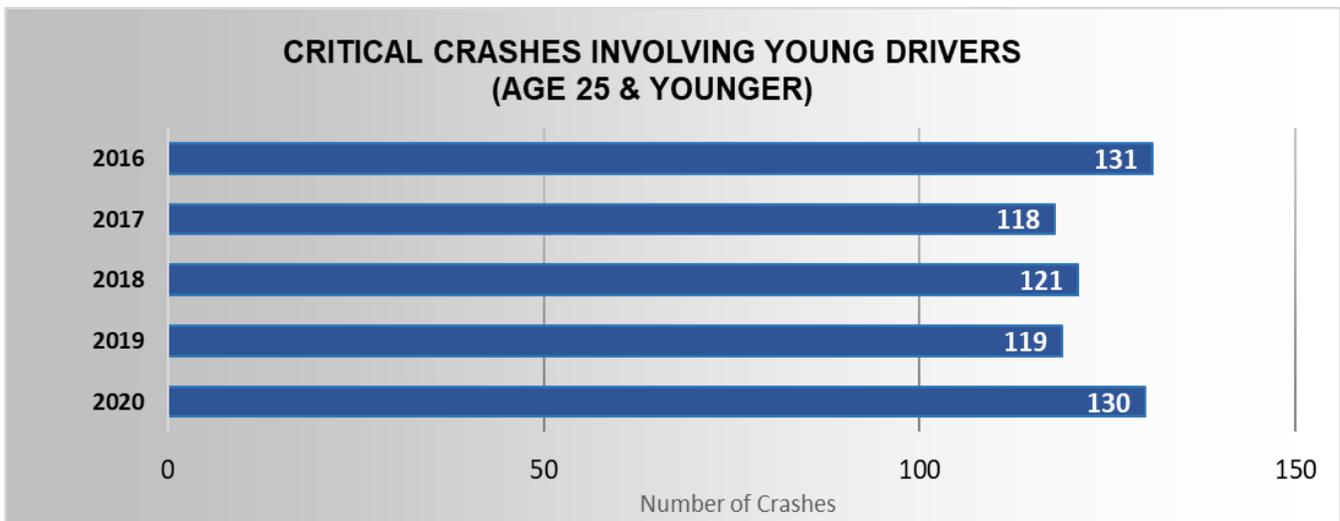
Wyoming has a three-step Graduated Driver Licensing process: 1) a supervised learning period, 2) an intermediate license, 3) a full-privileged license. Once an individual has completed an approved driver’s education course and held an intermediate permit for six months they can apply for full driving privileges at the minimum age of 16 ½ years.



The Challenge

For the years 2019-2020, 249 critical crashes involved at least one young driver, or approximately 28% of critical crashes.

Factors contributing to the frequency and severity of these crashes may include other emphasis or focus areas such as lane or road departure, speed-related, not using safety restraints, distracted driving, impaired driving, or icy/snowy roads.



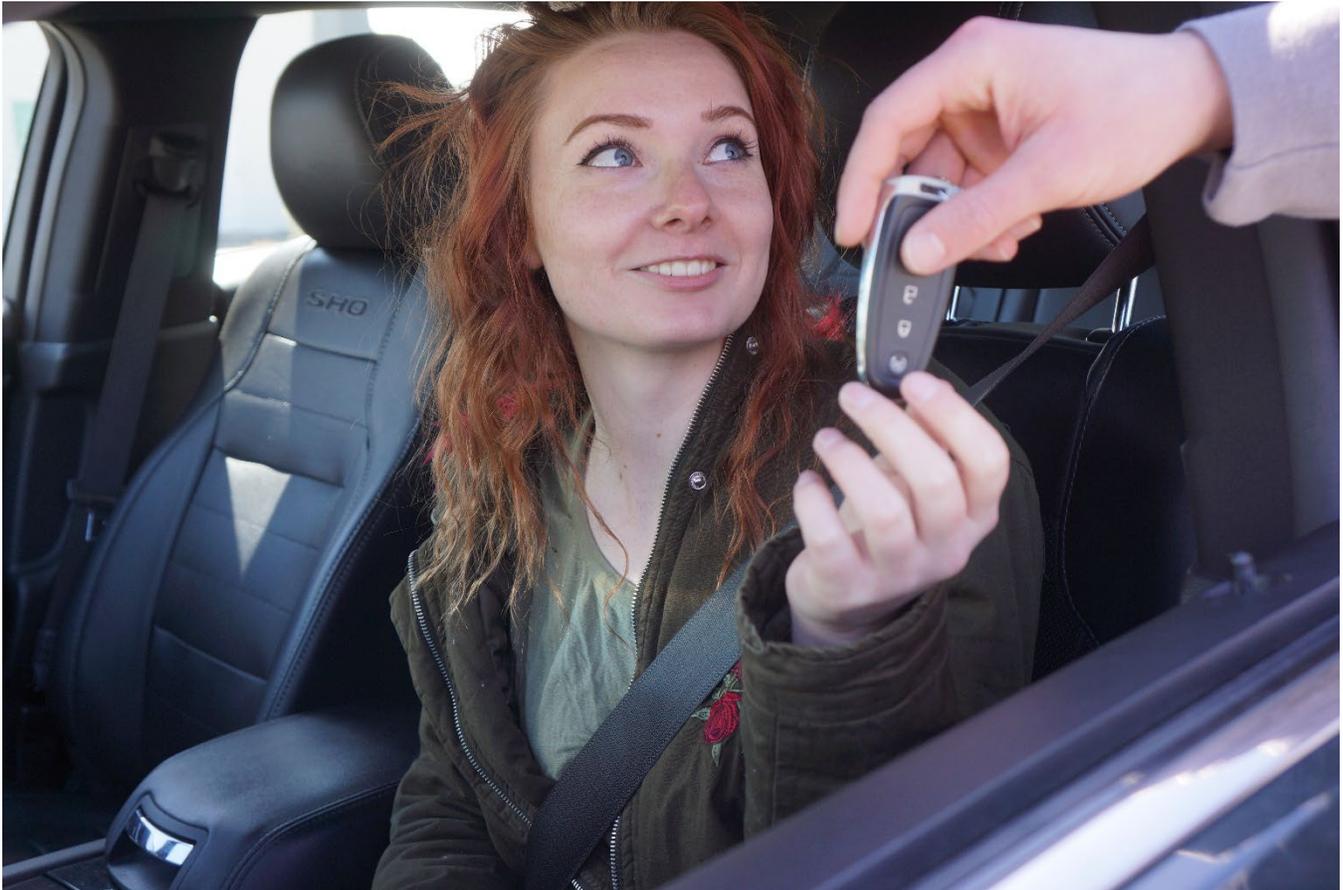
Key Strategies: Young Drivers

Enforcement

- Expand enforcement strategies focusing on young drivers
- Encourage anti-texting initiatives
- Encourage strict enforcement of laws focusing on issues pertaining to young drivers including:
 - Graduated Driver's License
 - Seatbelt laws
 - Distracted driving laws and ordinances
 - Cell phone ordinances
 - Passenger restrictions

Education

- Educate young drivers on all aspects of safe driving
- Encourage parents to consider the advantage of purchasing safer vehicles for their young drivers
- Make parents aware of in-vehicle monitoring devices
- Encourage open communication between parents and young drivers about the dangers of risky driving behaviors



Focus Areas

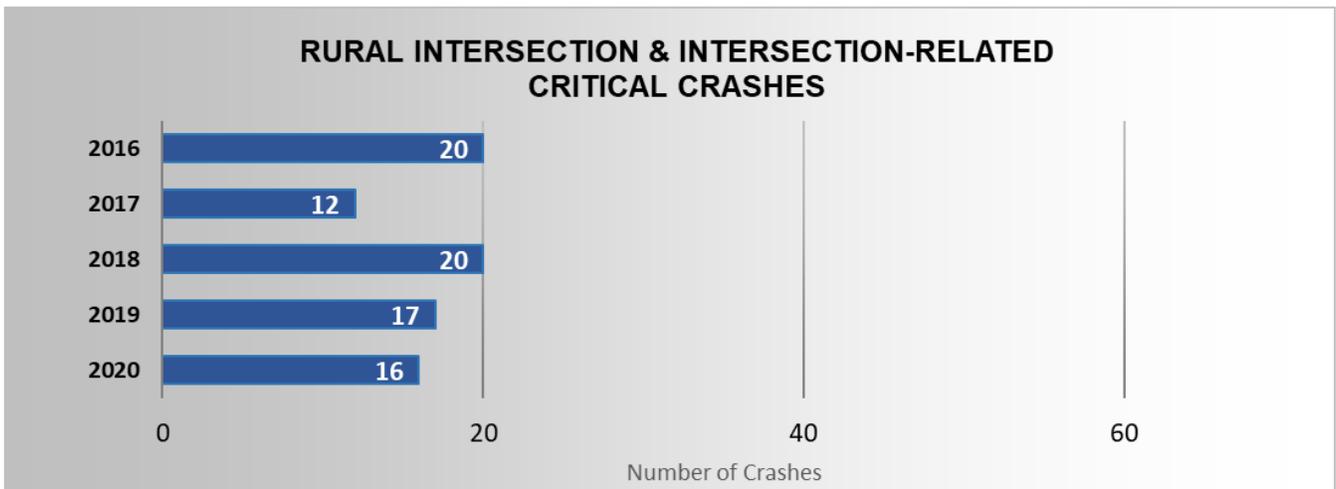
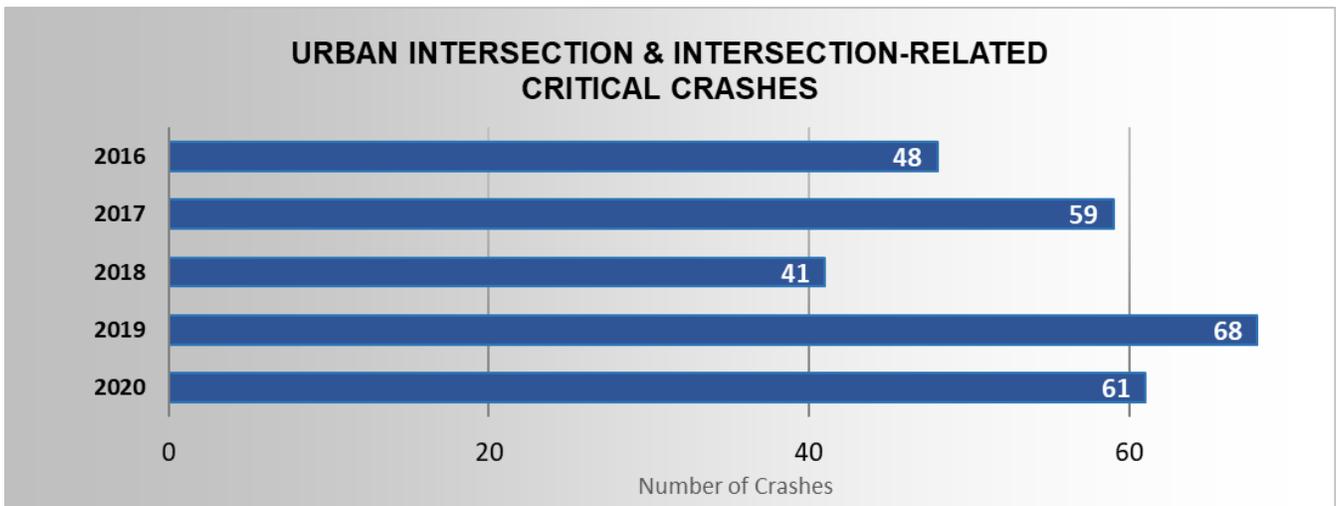
Focus Areas are areas of secondary focus for critical crash prevention treatment that has been identified as an area of concern, but with fewer numbers of critical crashes than emphasis areas (a contributor to critical crashes). Focus areas are important areas to address in order to achieve the goal of “Towards Zero Deaths”, but will likely have a smaller impact than emphasis areas. Focus areas are eligible for all programs and funding.

Intersections

Crashes often occur at intersections because these are locations where two or more roads intersect and activities such as turning left, crossing over, and turning right create the potential for conflicts with other vehicle, bicycle, or pedestrian traffic. Crashes at these locations can occur directly in the intersection or may occur nearby, related to the activity within the intersection.



Critical crashes within or related to intersections in Wyoming may be reduced through measures such as controlled intersections, improved visibility, and safety education programs.



Active Transportation: Pedestrian and Bicycle Modes

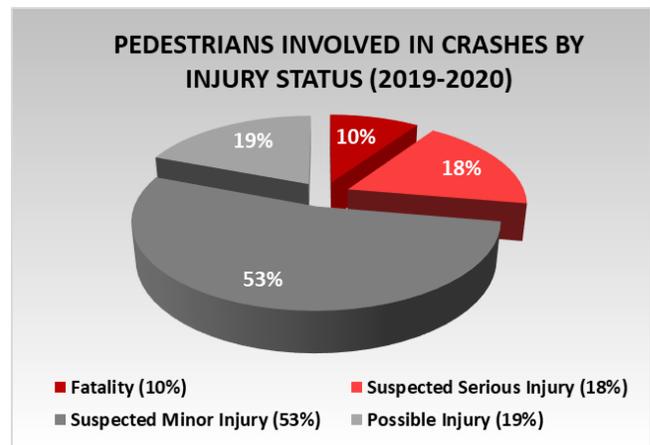
Walking and bicycling, also referred to as “Active Transportation”, are popular means of travel for Wyoming residents and visitors alike. People commonly walk or bike to work or school, to access commercial districts for retail shopping or food, and for recreation or exercise. Biking and walking are low impact, healthy activities that should be encouraged and made safer.

Pedestrians and cyclists are vulnerable road users due to their high risk of injury if struck by a motor vehicle. They have little or no protection to absorb and diffuse the transfer of energy created at impact, which is why pedestrians and cyclists experience a higher proportion of fatal and suspected serious injuries when a crash occurs. An increase in vulnerable road user crashes is a rising concern nationwide and will be closely monitored. In Wyoming, all collisions between motor vehicles and pedestrians or bicyclists are considered injury crashes, which are reviewed and evaluated annually.

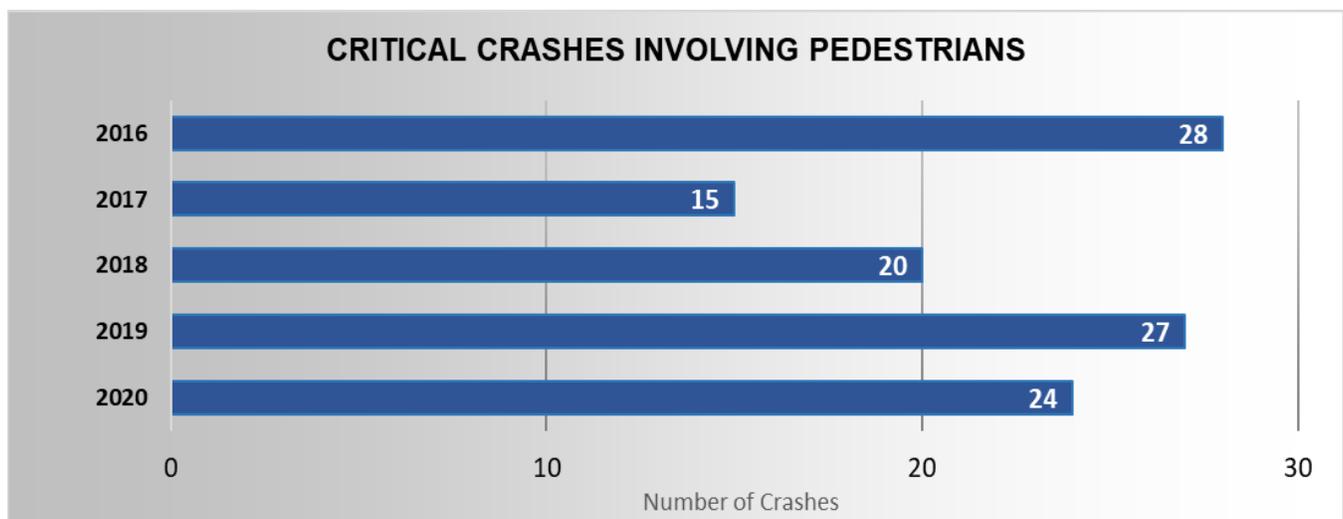
Pedestrians

In 2019-2020, 6% of critical crashes in Wyoming involved at least one pedestrian.

Of the 177 pedestrians involved in 163 crashes in 2019-2020, 17 pedestrians were fatality injured (10%), 32 were suspected to have a serious injury (18%), 94 were suspected to have a minor injury (53%), and the remaining 34 were suspected to have a possible injury (19%).



Ten of the 17 fatal pedestrian-involved crashes occurred in unlighted darkness conditions. Men were nearly twice as likely to be injured in pedestrian-involved crashes as compared to women. Alcohol was involved in 17% (27) of the 163 pedestrian-involved crashes, and drugs were involved in 6% (10) of pedestrian-involved crashes.

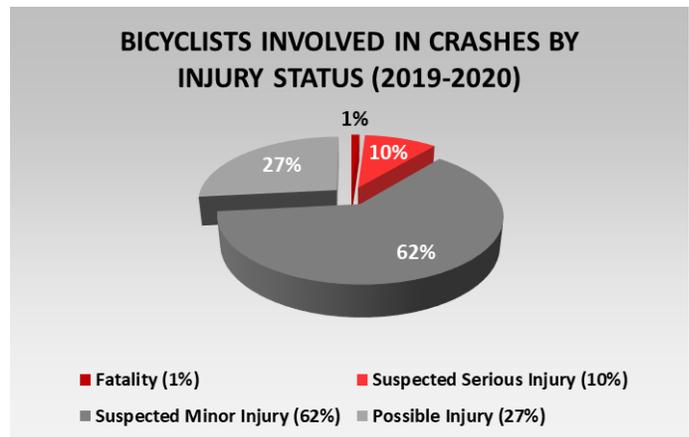


Bicycles

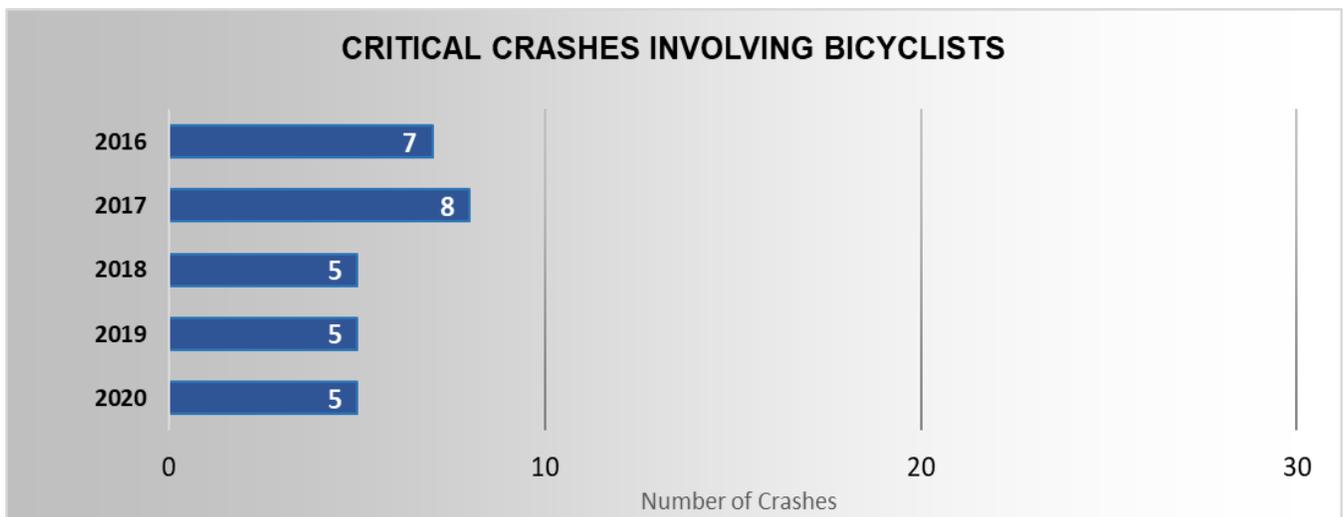


In 2019-2020, 1% of critical crashes in Wyoming involved at least one bicyclist.

Of the 90 bicyclists involved in 90 crashes in 2019-2020, 1 bicyclist was fatality injured (1%), 9 were suspected to have a serious injury (10%), 56 were suspected to have a minor injury (62%), and the remaining 24 were suspected to have a possible injury (27%).



The vast majority of bicycle-involved crashes (84 out of 90) occurred in urban areas with most of these (76 out of 84) taking place during daylight hours. More than half of all urban bicycle-involved crashes were intersection or intersection-related crashes (52, 62%), 16% were non-junction related (13), 12% were related to business entrances (10), and 10% were driveway-related (8).



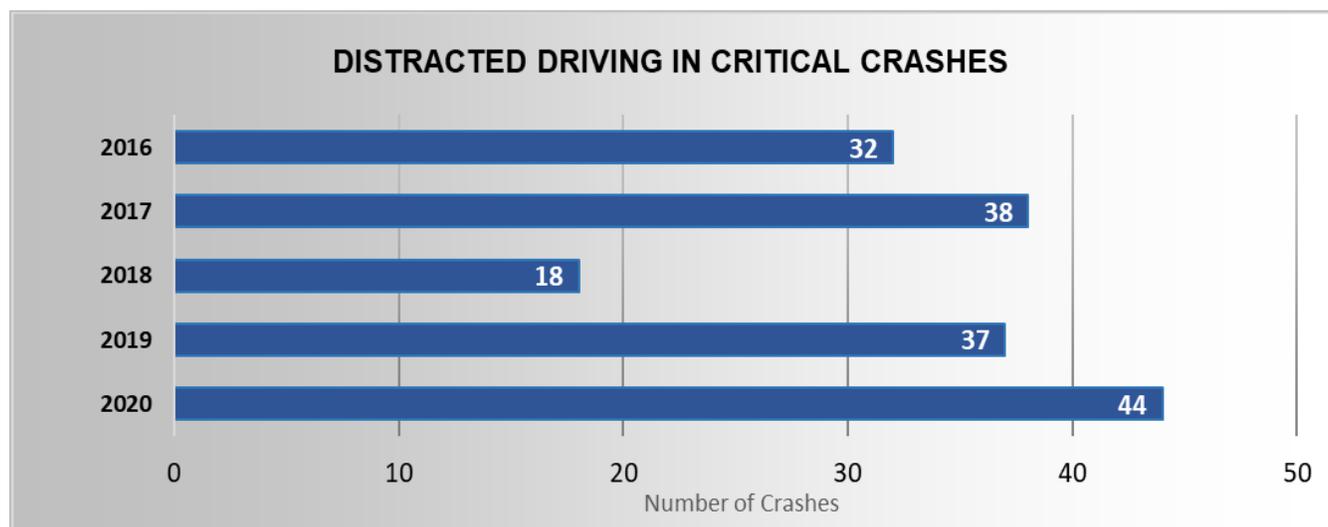
Distracted Driving

Distracted driving, defined as driving while engaging in any activity that diverts attention away from the task of safe driving, is a serious concern nationwide. Distracted driving activities include, but are not limited to, talking or texting on a phone, eating and drinking, talking to people inside the vehicle, or using other electronic features available in newer vehicle models. Distracted driving can also occur when something *outside* the vehicle distracts the driver. Driving safely requires the driver's full attention and any non-driving activity they engage in is a potential distraction that may increase the risk of crashing.



In 2019-2020, distracted driving was thought to be a potential factor in approximately 9% percent of critical crashes and approximately 10% of serious crashes. Distracted driving was attributed to 11% of motor vehicle fatalities and 10% of motor vehicle injuries in Wyoming. When distraction was noted for a driver involved in a crash, other distraction inside the vehicle was most common (45%), followed by distraction outside of the vehicle (30%), electronic communication device (21%), then other electronic device (4%).

Distracted driving is likely a largely underreported factor in motor vehicle crashes. The need to address the increasing trend of distracted driving is becoming greater. The SHSP aims to explore ways in which distracted driving related injuries can be reduced.



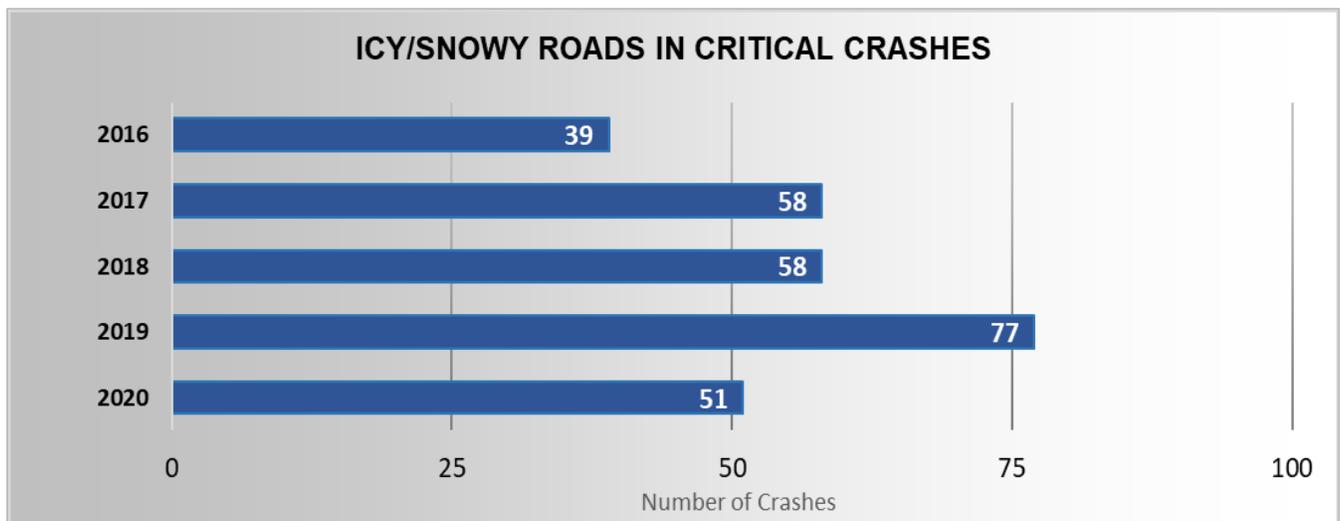
Icy/Snowy Roads

Adverse weather in Wyoming is inevitable and conditions can change at a moment's notice. The winter driving season typically extends from October through April; however, inclement winter weather may occur any time of the year. Weather conditions such as storms, snow, rain, fog, and icy roads can pose a significant traffic hazard. Roads become slick and visibility is reduced, increasing the risk of traffic accidents.



Driving safely in winter weather can be a challenge for even the most experienced driver. Informing drivers of the ever-changing road conditions is crucial to providing motorists with the most current information for safe decision-making.

Wyoming has addressed many of these challenges with roadway improvements such as variable message signs and variable speed limits, among others. There is always room to improve the safety of Wyoming roadways during times of adverse weather. The SHSP aims to address these challenges.

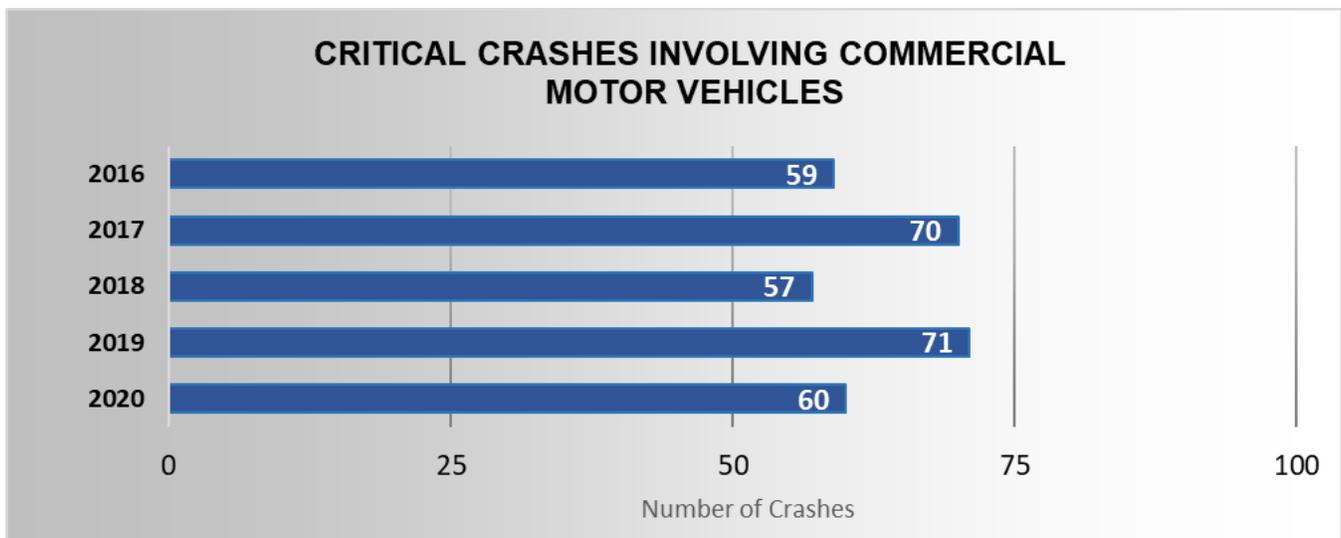


Commercial Motor Vehicles

Commercial motor vehicles (CMVs) are commonplace on Wyoming roadways. Interstate 80 through southern Wyoming is one of the busiest commercial vehicle corridors in the United States. This fact, combined with the varied terrain and challenging weather conditions that are often present in Wyoming, means that commercial motor vehicles such as tractor-trailer combinations can present a challenge to Wyoming motorists. Windy conditions can topple light trucks and mountain passes can reduce truck speeds to a crawl.



Wyoming is always exploring new ways to ensure commerce can move freely within and through the state while maintaining a safe environment for Wyoming motorists. Some of these efforts include Commercial Vehicle Safety Alliance (CVSA) training for Port-of-Entry personnel, a Mobile Enforcement and Education Team (MEET) to perform compliance inspections around the state, as well as education campaigns to raise awareness of the difficulties and hazards posed by commercial motor vehicles on the roadways.



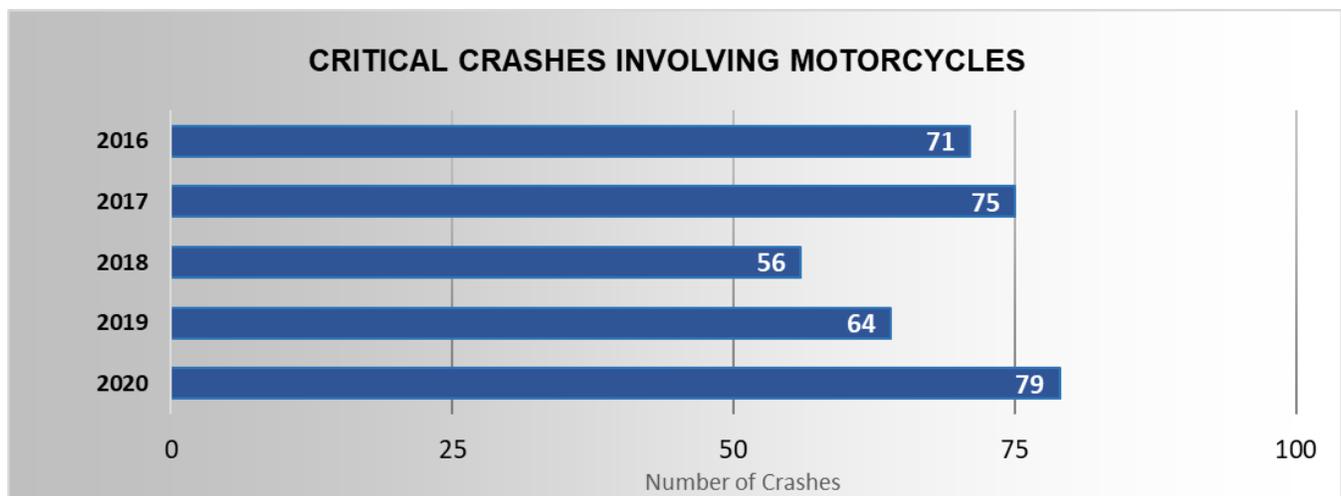
Motorcycles



Motorcycles are a popular mode of transportation in Wyoming. Scenic routes like Beartooth Pass, Chief Joseph Scenic Highway, Big Horn Mountain Loop, Wind River Canyon and many others attract motorcycle enthusiasts from across the country and the world. In addition, regional events such as the Sturgis Rally increase the number of motorcyclists on the roadways, which can make certain times of the year more dangerous for both motorcyclists and motorists alike.

While motorcycles are the most fuel-efficient class of highway vehicle they are also the most hazardous. In Wyoming, there are about 26,000 registered motorcycles. Motorcycles account for slightly less than 4% of all registered vehicles in Wyoming, but motorcycles are over-represented in fatal and serious injury crashes. Operating over the speed limit, operating at speeds too fast for conditions, and operating while impaired are factors in a majority of motorcycle critical crashes. In addition, Wyoming does not have a helmet use law for operators over 18 years of age.

WYDOT offers beginning rider training at eight locations across the state. The classes are taught by Motorcycle Safety Foundation certified instructors with a focus on the factors found to cause crashes and teaches riders the skills and techniques that can help prevent crashes. The Motorcycle Safety Program continues to promote safe riding practices including beginner and advanced rider training, wearing protective gear while riding, and driver awareness of motorcyclists.



Older Drivers

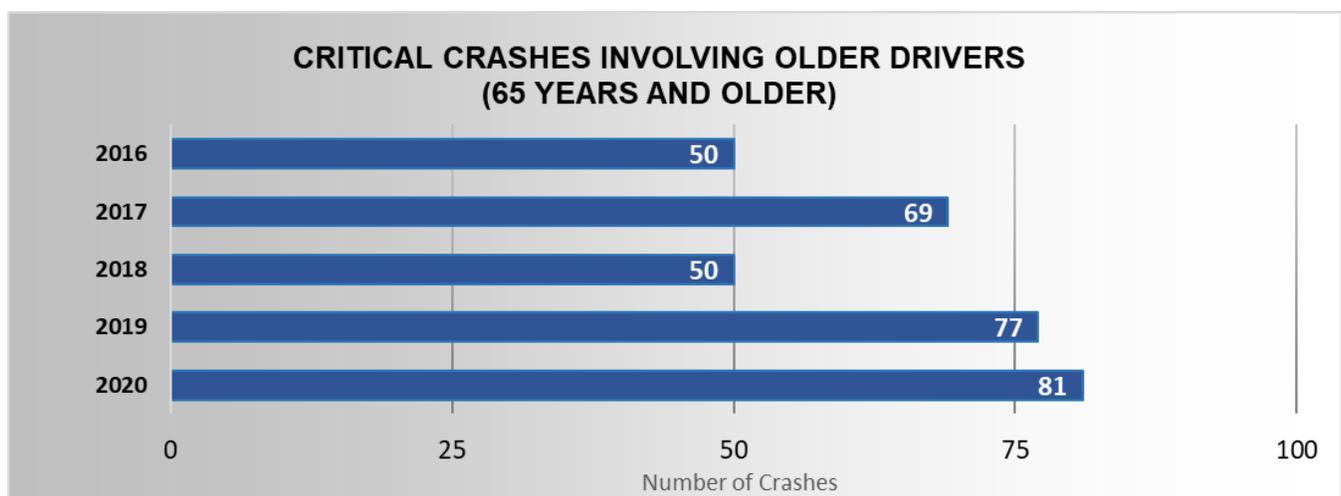
The Insurance Institute for Highway Safety³ reports that the number of drivers aged 70 or older is growing across the nation. Nationally, older drivers make up a larger share of the population and continue to drive as they age.

The ability to drive safely is affected by changes in physical and mental conditions and there is ample evidence to show most people experience age-related declines in physical and mental abilities. Advancing age may cause safety concerns related to declines in vision, diminished coordination, and slowed reflexes. These declines can signal a greater crash risk. However, each individual is unique and decisions about a person's ability to drive safely should never be based on age alone. In most cases older drivers can adapt and adjust driving habits in order to stay safe on the road.



Governors Highway Safety Association

According to the Wyoming Economic Analysis Division⁴, between July 2018 and July 2019, Wyoming's population of older adults (aged 65+ years) increased by 3.8% as compared to Wyoming's overall population increase of 0.2% during the same period. This increase reflects the aging of the Baby Boomer generation (births between 1946 and 1964), outmigration of Wyoming's younger population, and a statewide decrease in birth rate.



³ Insurance Institute for Highway Safety - Older Drivers. Accessed 08/03/2021 at <https://www.iihs.org/topics/older-drivers>.

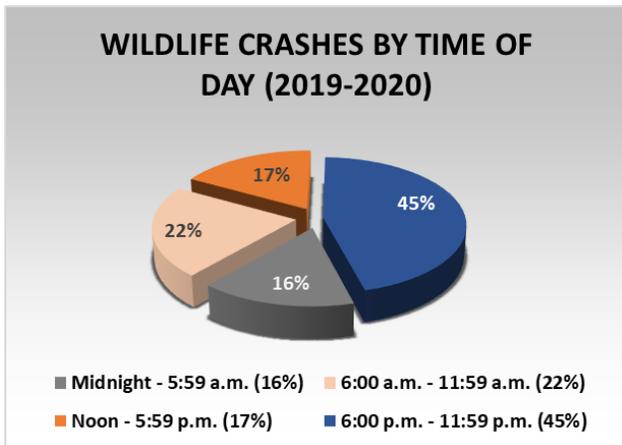
⁴ Wyoming Economic Analysis Division (2020). Wyoming's Population Aged the Fastest in the Country from 2018 to 2019. Accessed 10/14/2020 at http://eadiv.state.wy.us/pop/POP_NEWSRLSE_ASR19.pdf

Wildlife

Wyoming’s roadways allow people and products to travel throughout the state. Due to the mostly rural nature of Wyoming, these roadways often cross through the habitat of many native wildlife species. This shared use of space can lead to an increased risk of motor vehicle collisions with wildlife. This presents a real danger to human safety as well as wildlife survival. State and local transportation agencies look for ways to meet the needs of the traveling public, maintain human safety, and conserve wildlife.



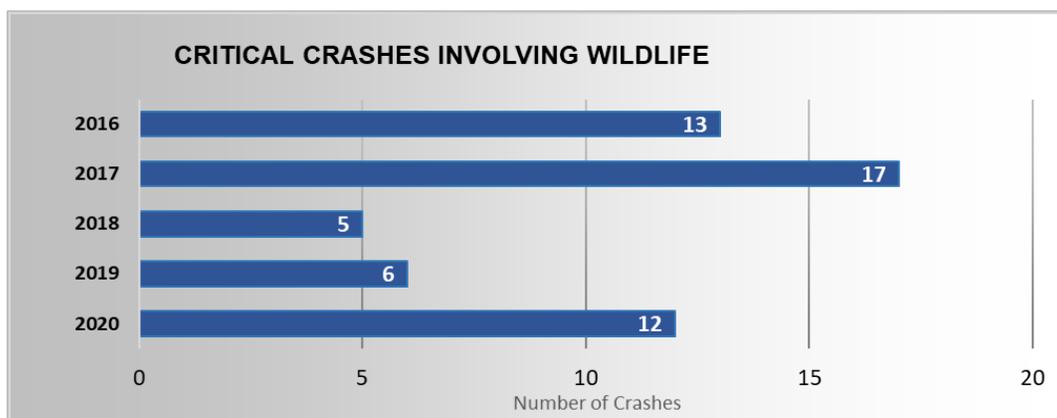
Wyoming collects information about wild animal-involved crashes including the type of animal: elk, deer, moose, pronghorn, bison, or other wild animal. While the majority of wildlife crashes fall into the property damage only (PDO) category, some collisions do result in critical crashes. For the years 2019-2020, there were 18 critical crashes and 102 serious crashes involving wild animals.



During the two-year period (2019-2020), 5,266 wildlife crashes were reported in Wyoming. Nearly half (45%) of these crashes occurred between the hours of 6 p.m. and midnight.

Deer were the most likely wild animal to be involved in a crash, with 4,359 (83%) crashes involving deer, 491 (9%) crashes involving pronghorn, and 267 (5%) involving elk. Moose, bison, and other wild animal comprised the rest of the crashes reported during the same period.

Wildlife crashes are likely under-reported due to the majority of wildlife collisions resulting in property damage only, or no damage at all. WYDOT will continue to collaborate with WGFD, NGOs and other interested parties in implementing solutions to wildlife/vehicle crashes and remain consistent with the Governor’s Wyoming Mule Deer and Antelope Migration Corridor Protection Executive Order 2020-1.



Work Zone Safety

A work zone is a temporary roadway environment where construction, maintenance, or utility work activities are taking place. Work zones are usually clearly marked with signage and often involve reduced speeds, lane closures, channeling devices, barriers, detours, and moving equipment/work vehicles. The work zone extends from the first warning sign or flashing lights on a work vehicle to the “End of Work” sign or last traffic control device. The work zone can be long-term, short-term, or mobile and can exist any time of the year, but are most common in summer months.

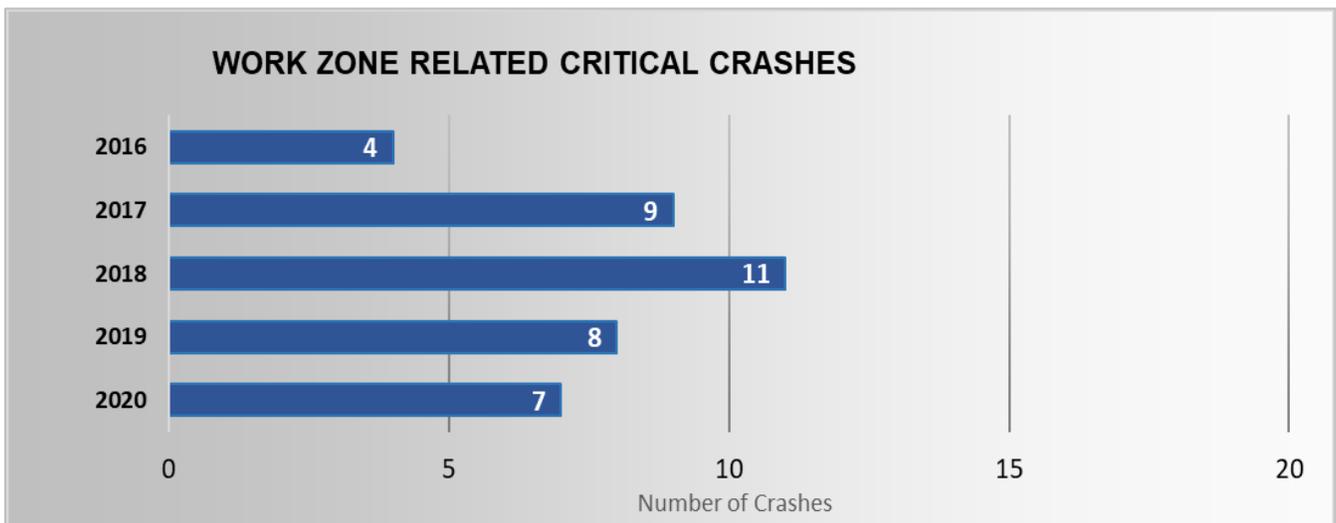


Increased funding for road construction during recent years has led to a significant increase in the number of highway construction projects around the country. Work zones on U.S. highways have become increasingly dangerous places for both workers and the motoring public.



Increased speed limits, impatient drivers, and traffic congestion have led to an overall increase in work zone injuries and fatalities. To combat these dangers, highway agencies are working on implementing safer work zone practices, improving communication in work zones, and educating the public on safe driving practices in work zones in the hopes of changing the behavior of drivers in order to prevent work zone crashes.

Of the 458 work zone crashes in 2019-2020, 15 were critical crashes (3%), 75 were serious crashes (17%), and 368 were damage crashes (80%).



Local Coordination Efforts

The SHSP can be implemented through existing safety plans, action plans and through the transportation planning process. All local safety partners should implement the SHSP to the extent that each agency or organization is capable. Implementation can occur at all levels of government from state to local to tribal. The SHSP will continue to support and encourage its local partners to address transportation safety issues in their communities in a proactive manner. Cities and counties face diverse transportation safety issues. It is important to note that some rural communities may face issues related to speeding while urban areas may encounter other safety problems such as pedestrian and vehicular conflicts at intersections and school safety zones. Despite these differences, local safety efforts should address the goals and objectives of the SHSP.

Local governments are encouraged to identify high priority transportation safety issues by analyzing crash numbers, types, and severity of crashes and develop countermeasures to address them. Local governments should utilize effective safety programs for rural and urban communities in order to address their local safety issues. The safety coordination among local, state, and federal partners will improve transportation safety for the driving public in the state of Wyoming.



As part of the local coordination effort, WYDOT and the WYT2/LTAP center have helped 16 counties implement the Wyoming Rural Road Safety Program (WRRSP). In addition, 18 counties participated in two rounds of a statewide sign program. Both of these programs are data driven and include the consideration of historical data to select locations for the low-cost safety improvements. The speed limit program has also helped multiple counties in establishing speed limits on local roads.

The City of Cheyenne Metropolitan Planning Organization (MPO) developed a dedicated regional safety plan. The coordination among the various safety partners in the state will continue into the future to ensure that local governments are involved in identifying and implementing safety improvements on local roads.

The Wind River Indian Reservation (WRIR) has also benefited from the local safety programs. Several safety studies have been conducted to develop and help implement a strategic highway safety plan. In addition, a safety summit was held on the reservation in 2016. Ongoing safety efforts should continue in order to raise awareness for any concerning behavioral issues identified by recent safety studies.

Systemic Treatments

The systemic approach to safety represents opportunities to improve safety on Wyoming roadways by widely implementing improvements based on high-risk roadway features correlated with specific severe crash types. This approach provides a more comprehensive method for safety planning and implementation that supplements and complements traditional site analysis. It also helps agencies broaden their traffic safety efforts by considering risk along with crash history to identify where to make low-cost safety improvements. These treatments may only show a theoretically favorable benefit to cost based on a system level since the low numbers of crashes sometimes do not lend themselves to spot improvements.



An example of a systemic treatment involves run off the road crashes. Calculations indicate that rumble strips show a favorable benefit to cost at a system level, but may not identify spot improvement locations. Additional systemic treatments include curve signs, delineators, pavement markings, guardrail, signals, and surface friction treatments. These projects receive Highway Safety Improvement dollars annually based on this system or corridor-level analysis.



Continuing Highway Safety Areas

Continuing Safety Areas are programs that reflect national or regional goals. Many of these safety areas produce critical crashes that are growing in number and warrant additional system-wide attention. Normally these areas are only eligible for HSIP as spot improvements based on crash severity history.

Railroad Crossing Safety

The Federal Railroad Administration Office of Safety Analysis⁵ reports that in 2020, there were 190 fatal crossing incidents between a railway vehicle and a highway user at a crossing site, resulting in 202 fatalities. The National Safety Council states that in the United States, a person or vehicle is hit every four hours, resulting in fatalities and injuries that are completely preventable.

For the years 2016-2020, Wyoming recorded 49 traffic crashes related to a railway grade crossing, averaging slightly less than 10 crashes annually. Of these crashes, 10 involved contact with a railway vehicle, averaging two crashes annually. The 10 railway-vehicle involved crashes at a railway grade crossing resulted in no fatal crashes, three injury crashes with four injuries, and seven property damage only crashes. The remaining 39 crashes related to a railway grade crossing resulted in no fatal crashes, 6 injury crashes with 8 injuries, and 33 property damage only crashes. Most crashes occurring at a railway grade crossing were between motor vehicles (27); 22 were the result of a rear end collision (front to rear) and five were the result of a backing collision (rear to front).



⁵ Federal Railroad Administration Office of Safety Analysis. Accessed 04/15/2021 at <https://safetydata.fra.dot.gov/OfficeofSafety/publicsite/Query/AccidentByRegionStateCounty.aspx>

Snow Plow Safety



Snow plow drivers face many hazards as they labor to keep Wyoming's roadways open for travel during the long winter driving season (October through April). In addition to low visibility from poor weather conditions and slippery roads, plows may experience reckless or distracted driving by other motorists, operators who drive too fast for conditions, and impaired drivers.

Snow plow-involved crashes include all vehicle types and owner types (state, city, business, private) functioning as a snow plow at the time of the crash. For the years 2019-2020, 109 snow plow-involved crashes were reported. The

majority of snow plow-involved crashes were damage crashes (89, 82%); however, there were 15 serious crashes (14%) and 5 critical crashes (4%).

Special Vehicles Safety

All-terrain vehicles such as recreational 4-wheelers, off-road motorcycles, and side-by-side utility vehicles are permitted on Wyoming roadways with appropriate registration and safety equipment. Many of these vehicles lack certain equipment, such as DOT-approved tires, and can present a safety hazard on Wyoming roadways. All-terrain vehicles are often driven on city streets and state highways along with normal traffic. These vehicles can be hard to see and are not intended to be operated on-road. Additionally, operators may not be prepared for the unique handling characteristics of these vehicles on paved surfaces.

Snowmobiles are also permitted to operate on sections of roadway within certain county and city/town jurisdictions, and may be operated within the right-of-way of Wyoming highways (but not on the main traveled roadway). Close proximity to highway traffic and crossings of main-traveled roadways by snowmobiles pose a safety hazard for both riders and the motoring public.



During the 2019-2020 period there were 95 crashes involving special vehicles including 7 fatal crashes, 62 injury crashes, and 26 property damage only crashes.

Highway Safety Enablers

The foundation to set priorities and have the highest likelihood of reducing critical crashes rests on quality data and records processes. While these will not reduce critical crashes directly, they are still strategic in nature as they enable all safety partners to share a common understanding of the problems that are being faced.

Safety Management System



WYDOT has rolled out a Safety Management System (SMS) application to assist the various Programs and Districts within the Department to optimize the use of safety funds on the state's highways. All state roadways have been evaluated using the methodology provided in the national Highway Safety Manual (HSM). The SMS application allows Department decision makers to identify the locations that warrant attention, and then to select the most cost-effective benefit-to-cost safety treatments to propose at those locations.

Traffic Records System

The main sets of data within the Traffic Records System are Crash, Citation & Adjudication, Roadway Features, Driver, Vehicle, and Injury Surveillance. These diverse data sets provide the foundation for safety analyses that help drive the actions identified in the SHSP. The Wyoming Traffic Records Coordinating Committee (WyTRCC) coordinates activities amongst the various departments and traffic safety partners. To better support the focus areas in the Strategic Highway Safety Plan, over the next few years, special attention will be given to:



- 1) consolidating a Traffic Records Inventory (a resource that identifies what types of traffic records data exist in Wyoming, and who to contact for more information)
- 2) adding value to the traffic records by improving the integration between various data sets and
- 3) implementing and communicating performance measures to help drive improvements in the traffic records.

Evaluation

The Wyoming SHSP is intended to guide the various safety partners around the state in their pursuit of quality safety programs, projects, and activities. A quality program, project, or activity is one that expends resources effectively and efficiently toward the goal of the SHSP to reduce critical crashes.

Wyoming is working to address the unique challenges the state faces. Wyoming recognizes that urban and rural areas have different challenges and is developing performance targets to address the circumstances of both. Wyoming will report the status of these performance measures to demonstrate the adherence to the following in accordance with 23 U.S.C. 150:

- The condition and performance of the National Highway System in the state;
- The effectiveness of the investment strategy document (SHSP) in the state asset management plan for the National Highway System;
- The progress in achieving performance targets identified.

The state of Wyoming will address highway safety needs by considering enforcement, engineering, education, and EMS in any actions the state undertakes. These factors of safety are to be addressed by the Committee with each revision to the SHSP document.

The Wyoming SMS Committee will monitor the various statewide efforts by annually reviewing the Highway Safety Plan (HSP), the Highway Safety Improvement Plan (HSIP), and crash data collection.

Highway Safety Plan (HSP)

The state's Highway Safety Plan (HSP) documents a highway safety program that establishes data-driven performance targets and selects countermeasure strategies and projects in order to meet performance targets. This document is coordinated with the state SHSP as defined in 23 U.S.C. 148(a) that the state submits each fiscal year as its application for highway safety grants. The HSP describes the strategies and projects that the state plans to implement and the resources from all sources it plans to use to achieve its highway safety performance targets.

State HSP performance targets are identical to the state DOT targets for common performance measures (fatality, fatality rate, and serious injuries) reported in the HSIP annual report, as coordinated through the state SHSP. These performance measures shall be based on a 5-year rolling average that is calculated by adding the number of fatalities or number of serious injuries as they pertain to the performance measure for the most recent five consecutive calendar years, ending in the year for which the targets are established. The Annual Report File may be used, but only if final FARS data are not yet available. The sum of the fatalities or sum of serious injuries is divided by five and then rounded to the tenth decimal place for fatality or serious injury numbers and rounded to the thousandth decimal place for fatality rates.



Highway Safety Improvement Program (HSIP)

The USDOT used the Moving Ahead for Progress in the 21st Century Act (MAP-21), the Fixing America's Surface Transportation Act (FAST Act), and the Bipartisan Infrastructure Law (BIL) to guide the development of rules for reporting on measures that support the goal of improving the safety of the transportation system. The HSIP is a federal-aid highway program established with the goal of achieving a significant reduction in fatalities and serious injuries on all public roads, including non-state-owned public roads, roads on tribal lands, and high-risk rural roads (HRRR).

Both the HSP and the HSIP require five (5) performance measures:

1. Number of fatalities,
2. Rate of fatalities,
3. Number of serious injuries,
4. Rate of serious injuries, and
5. Number of non-motorized fatalities and serious injuries.

Wyoming's SMS Committee recognizes there will be worthwhile safety projects not specifically targeted within this plan. The SMS Committee will monitor the direction these safety projects take toward the ultimate goal of reducing critical crashes.

Crash Data Collection

The data contained within the supporting documentation will be accurate and current at the time of publication. Crash data, along with the eventual inclusion of other data, will be coordinated by WYDOT.

The Highway Safety Program currently collects crash data in electronic form. All state and local law enforcement agencies in Wyoming use a uniform crash form and data is consistent throughout the state. Crash data from other sources (e.g. Grand Teton National Park) is collected on the agency's form and transposed to the Wyoming crash form to maintain data uniformity. The data must pass a rigorous and thorough quality control process before analysis takes place.



Wyoming is taking a performance-based approach in the collection and analysis of crash data. Performance measures have been implemented to ensure the crash data is being recorded and disseminated in the most efficient manner possible. Crash data is tracked to determine the effectiveness of the plans outlined in the SHSP. Crash statistics for important crash criteria have been identified and infrastructure enhancements, along with educational initiatives, are considered in accordance with the analysis of the data.

In conclusion, the goal of the Wyoming SHSP is to reduce the number of critical crashes on Wyoming roadways. This plan outlines the coordinated efforts of the Wyoming Department of Transportation and safety partners, both statewide and federal.

Definitions

KEY CONCEPTS:

Fatality – A person who dies as the result of a traffic crash; the individual must have died within 30 days due to injuries sustained in the crash.

Injury – Bodily harm to a person (even a hint of a complaint of pain, bruise, or nausea) as a result of a crash that does not result in death.

CRASH SEVERITY – Based on the most severe injury resulting from the crash.

Fatal Crash – A traffic crash involving one or more persons who sustained an injury resulting in death within 30 days of the crash and as a result of the crash.

Injury Crash – A traffic crash involving one or more persons who were injured but there were no fatalities.

Property Damage Only (PDO) Crash – A traffic crash involving property damage of \$1,000 or more with no apparent injuries or fatalities.

INJURY STATUS – The injury classification for each person directly involved in the crash.

Fatal Injury – Any injury that results in death within a 30 day period after the crash occurred.

Suspected Serious Injury – Any injury, other than a fatal injury, that prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred. It is often defined as “needing help from the scene.”

Suspected Minor Injury – Any injury, other than a fatal or serious injury, which is evident to observers at the scene of the crash in which the injury occurred. Examples: contusions (bruises), laceration, bloody nose.

Possible Injury – A complaint of pain without visible injury.

No Apparent Injury – No physical evidence of injury and person does not report any changes in normal function.

CRASH CATEGORIES

Critical Crash – Critical crashes include all fatal and serious injury crashes.

Serious Crash – Serious crashes include all suspected minor injury and possible injury crashes.

Damage Crash – Damage crashes include all no apparent injury and unknown injury crashes.

Emphasis Area – An area of primary focus for critical crash prevention treatment that has been identified as an area of concern with large numbers of critical crashes (a major contributor to critical crashes). Emphasis areas are given priority when exploring safety treatments.

Focus Area – An area of secondary focus for critical crash prevention treatment that has been identified as an area of concern, but with fewer numbers of critical crashes than emphasis areas (a contributor to critical crashes).

KEY TERMS:

Aggressive Driving – The behavior of an individual who commits a combination of moving traffic offences so as to endanger other persons or property.

Alcohol-Involved – Those crashes in which at least one driver or non-motorist was suspected of alcohol use (no test results available) or tested positive for any level of alcohol using a breathalyzer or alcohol blood/urine test.

Bicyclist – A person using a non-motorized vehicle powered solely by pedaling.

Blood Alcohol Concentration (BAC) – The percent of alcohol in a person's blood stream. In Wyoming, a person is legally intoxicated if they have a BAC of 0.08% or higher.

Channeling Device – Used to warn motorists of unusual conditions created by construction or maintenance activities in or near a travel way, and to guide motorists safely past the work area. Devices include cones, vertical panels, drums, barricades, and barriers.

Commercial Motor Vehicle (CMV) – Any motor vehicle used for the transportation of goods, property, or people in interstate or intrastate commerce.

Controlled Intersection – An intersection that has traffic control signs or signals.

Deficient Curve – A curve is considered deficient if the radius is inadequate for the driver to comfortably traverse the curve at the designated speed.

Distracted Driving – Driving while engaging in any activity that diverts attention away from the task of safe driving.

Drug-Involved – Those crashes in which at least one driver or non-motorist was suspected of drug use (no test results available) or tested positive for drugs using a blood/urine test.

Emergency Medical Services (EMS) – A critical component of the emergency and trauma care system that provides response and medical transport to the injured.

Graduated Driver Licensing (GDL) – A system that initially restricts the driving privileges of new drivers.

High Risk Rural Roads (HRRR) – Those public roadways functionally classified as rural major or minor collectors, or rural local roads, that have or will have (based on increasing traffic volume) a crash history that ranks that road, or section of road, as a high-risk rural roadway.

Horizontal Curve/Alignment – A horizontal geometric feature of a roadway that changes the alignment or direction of the road.

Ignition Interlock Device (IID) – A small handheld car breathalyzer device installed in a vehicle that measures the amount of alcohol in the user's breath and prevents a user from starting a vehicle until a breath alcohol test is taken.

Impaired – Drivers or non-motorists that may be under the influence of alcohol, illegal drugs, or prescription medications.

Injury Surveillance System – The ongoing collection of data describing the occurrence of, and factors associated with, injury.

Intersection – An area containing the crossing or connection of two or more traffic ways within the lateral curb/boundary lines of the traffic ways.

Intersection-Related – The areas of approach to or exit from an intersection that are related to the activity of the movement of traffic through the intersection.

Motorcycle – Any motor vehicle having a seat or saddle for the use of its operator and designed to travel on not more than three wheels in contact with the ground.

Motorist – Any occupant of a motor vehicle in transport.

Non-Junction – A road segment that has no junction in it; a non-intersected traffic way.

Non-Motorist – Any person involved in the crash who was not an occupant of a motor vehicle.

Occupant – Any person in or on a motor vehicle in transport.

Older Driver – A driver with an age of 65 years or older.

Pedestrian – Any person who is not an occupant of a motor vehicle in transport who is directly involved in the crash and has an injury as a result of the crash.

Primary Seatbelt Law – Allows law enforcement officers to ticket a driver or passenger of a motor vehicle for not wearing a seatbelt without any other traffic offense taking place.

Railway Grade Crossing – An intersection between a traffic way and train track that cross each other at the same level (grade).

Railway Vehicle – Any land vehicle that is 1) designated primarily for, or in use for, moving persons or property from one place to another on rails and 2) not in use on a land way other than a railway. Includes railway maintenance vehicles traveling on the railway.

Risky Behavior – Acts or decisions that increase the risk of injury to oneself and/or others.

Roadway Departure/Lane Departure – When a vehicle crosses an edge line or a center line, or otherwise leaves the traveled way.

Rumble Strip – A series of raised strips across a road or along its edge, used as a road safety feature to alert inattentive drivers of potential danger by causing a tactile vibration and audible rumbling as a warning to drivers of speed restrictions or of the edge of the road.

Rumble Stripe – Rumble strips painted with a retroreflective coating to increase the visibility of the lane/road edge at night and during inclement weather.

Rural – Located outside the corporate limits of any incorporated city or town.

Safety Treatment/Countermeasure – An action designed to counteract a threat to safety, or actions taken to improve transportation safety and therefore decrease the number of injuries and fatalities.

Speed-Related – Those crashes in which exceeding the posted speed limit and/or driving too fast for the conditions of the roadway may have been a contributing factor in the crash.

Spot Improvement – Actions that address problems at specific locations such as intersections, short lengths of roadway, or single destinations.

State Planning and Operations Database (SPOD) – A central database containing planning and operations data.

Statewide Transportation Improvement Program (STIP) – A six-year, fiscally constrained program of planned transportation projects.

Surface Friction Treatment – A safety-first pavement treatment intended to restore and maintain pavement friction to reduce crashes. It is a thin layer of high-quality polish-resistant aggregate bonded to the pavement surface with polymer resin binder.

Targeted Enforcement – An increased law enforcement presence in specific high-risk areas, at specific high-risk times, or focused on specific high-risk driving behaviors that have been identified as safety problems.

Traffic Control Device – Markers, signs, and signal devices used to inform, guide, and control traffic, including motor vehicles, pedestrians, and bicyclists.

Transverse Rumble Strips – Rumble strips placed in the travel lane perpendicular to the direction of travel in order to alert drivers of a need to slow down or stop, or other upcoming changes that may not be anticipated by an inattentive driver.

Urban – Located within the corporate limits of a incorporated city or town.

Variable Message Sign – An electronic road sign used to provide motorists en-route with real-time pertinent travel information, including road conditions, incident warnings, travel times, detours, and special events; used as a traffic control device.

Variable Speed Limit – Speed limits that change based on road, traffic, and weather conditions, improving safety by restricting speeds during adverse conditions.

Vulnerable Road User – Pedestrians and cyclists who are at high risk of injury if struck by a motor vehicle due to little or no protection to absorb and diffuse the transfer of energy created at impact.

Work Zone – A temporary roadway environment where construction, maintenance, or utility work activities are taking place. Work zones are usually clearly marked and extend from the first warning sign or flashing lights on a work vehicle to the “End of Work” sign or last traffic control device. The work zone can be long-term, short-term, or mobile.

Young Driver – A driver with an age of 25 years or younger.

APPENDIX – Supporting Data and Information

Critical Crashes in Wyoming from 2016 to 2020

Critical Crashes in Wyoming (2016 - 2020)			
Year	Suspected Serious Injury Crashes	Fatal Crashes	Total Critical Crashes
2016	301	100	401
2017	317	105	422
2018	259	100	359
2019	320	120	440
2020	328	112	440

While critical crashes (fatal and serious injury crashes) in Wyoming have remained stable at about 3% of all crashes over the past five years, serious crashes have declined from 16% (2016) to 15% (2020) of all crashes, representing a decrease of 1%, or approximately 700 crashes over the period.

Alcohol-Involved Critical Crashes

Driving under the influence of alcohol remains a major cause of motor vehicle fatalities and injuries across the nation. Wyoming is not unique in this challenge and continues to explore ways in which the instances of alcohol-involved crashes can be reduced.

During the five-year period 2016-2020, critical crashes comprise about 13% of alcohol-involved crashes, with serious crashes at 29% and property damage only crashes at about 58%.

Single vehicle crashes are more likely to occur in alcohol-involved critical crashes (73%) as compared to non-alcohol-involved critical crashes (61%).

Alcohol-involved critical crashes more often occur during the weekend period, with more occurring on Friday (18%), Saturday (20%), and Sunday (19%) as compared to non-alcohol-involved crashes, which are evenly distributed throughout the week.

Collision Types in Critical Crashes by Alcohol Involved (2016-2020)			
Collision Type	Alcohol Involved	No Alcohol Involved	Total Critical Crashes
Single Vehicle	357 (73%)	967 (61%)	1,324
Head-On	39 (8%)	117 (7%)	156
Rear-End	31(6%)	138 (9%)	169
Sideswipe	12 (2%)	48 (3%)	60
Angle	47 (10%)	295 (19%)	342
Other	1 (<1%)	10 (<1%)	11
Total	487 (100%)	1,575 (100%)	2,062

Day of Week in Critical Crashes by Alcohol Involved (2016-2020)			
Day of Week	Alcohol Involved	No Alcohol Involved	Total Critical Crashes
Monday	55 (11%)	227 (14%)	282
Tuesday	57 (12%)	213 (14%)	270
Wednesday	41 (8%)	220 (14%)	261
Thursday	57 (12%)	236 (15%)	293
Friday	89 (18%)	238 (15%)	327
Saturday	96 (20%)	235 (15%)	331
Sunday	92 (19%)	206 (13%)	298
Total	487 (100%)	1,575 (100%)	2,062

Roadway Conditions and Critical Crashes

Road conditions are a major contributing factor in critical crashes in Wyoming. Weather can play a significant role in how safe a roadway is at any given time. Additionally, the general condition of the road is a major contributor to the overall safety of Wyoming’s roadways. Sharp curves, unlighted intersections, poor surface conditions, etc. are all factors that contribute to the number of critical crashes. By aiming to identify and improve roadway sections where the dangers exist, Wyoming can take a proactive approach in attempting to address the roadway sections where critical crashes are more likely to occur.

Weather in Wyoming is often unpredictable and severe weather can strike with little notice. Many of Wyoming’s roadways are at high elevations and are more susceptible to extreme weather changes. Wyoming has taken many steps to address this challenge. One example is the variable speed limits that are in place along Interstate 80. This interstate traverses many high elevation mountain passes where severe weather is commonplace. The Wyoming segment of Interstate 80 has the distinction of being the highest section of this interstate in the United States. This, combined with the fact that Interstate 80 is one of the busiest commercial corridors in the nation, presents a major challenge to overcome. Speed

Road Conditions in Critical Crashes (2016-2020)		
Road Condition	1st Condition	2nd Condition
Dry	1,640	6
Wet	98	13
Ice/Frost	216	32
Snow	49	103
Mud/Dirt/Gravel	39	24
Slush	11	12
Oil/Fuel	0	0
Sand on Dry Pavement	2	1
Sand on Icy Road	2	3
Water Standing/Running	0	2
Other	1	1
Unknown	4	2
Total	2,062	199

limits along Interstate 80 can be reduced incrementally as needed to allow for safer travel. The variable speed limits combined with variable message signs alert drivers to the conditions ahead.

The SHSP aims to continue to identify ways in which weather-related obstacles can be addressed.

Crashes and Horizontal Alignment

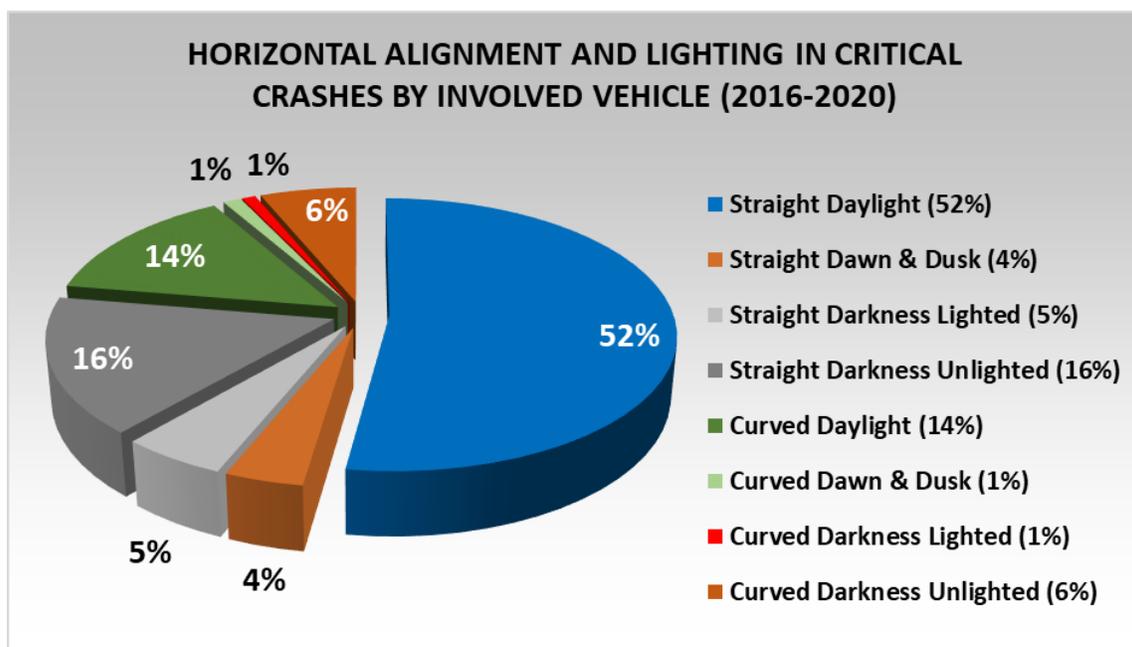
Horizontal alignment refers to the horizontal curvature of the road.

Horizontal curves can present a set of special challenges, especially for vehicles with high profiles, such as trucks and SUVs. Due to their higher center of mass, large vehicles are more susceptible to overturning at curves. Research suggests that overturns at curves can occur at

speeds only slightly higher than the curve's design speed. Off-tracking of vehicles (where the vehicle leaves its lane of travel) can present dangers to other roadway users as well. Speed significantly influences off-tracking and lane departures at curves.

The same dangers apply to motorcyclists who enter curves at too high a speed. For a motorcyclist, the acceptable level of comfort in a curve can be higher due to the nature of the vehicle, operator inattention, and inexperience, resulting in a dangerous approach into a curve. In fact, a rider entering a curve at too high a rate of speed is one of the leading contributors to motorcycle crashes.

Horizontal Alignment and Lighting in Critical Crashes By Involved Vehicle (2016-2020)	
Curved Darkness Unlighted	190
Curved Darkness Lighted	27
Curved Dawn and Dusk	36
Curved Daylight	423
Straight Darkness Unlighted	490
Straight Darkness Lighted	157
Straight Dawn and Dusk	117
Straight Daylight	1,582
Unknown (Lighting or Horizontal Alignment)	13
TOTAL	3,035



**Wyoming Licensed Drivers Involved
in Critical Crashes by Age (2020)**

Age Range	Driver Fatalities & Suspected Serious Injuries by Age (#)	Total Driving Population	Driver Fatalities & Suspected Serious Injuries by Age (%)
25 and younger	44	74,637 (16%)	20%
26-34	45	71,275 (15%)	20%
35-44	30	78,171 (17%)	13%
45-54	25	65,468 (14%)	11%
55-64	38	78,012 (16%)	17%
65-74	24	66,250 (14%)	11%
75 and older	19	36,987 (8%)	8%
Total	225	470,800 (100%)	100%

Wyoming Critical Crashes 5-Year Average Comparisons 2011-2015 and 2016-2020

