

Wyoming

Strategic Highway Safety Plan

2012



Table of Contents

Acknowledgements	4
Acknowledgement Logos	5
Introduction	6
Safety Plan	7
Safety Emphasis Areas	10
Emphasis Area 1 - Lane and Roadway Departure Crashes	12
Emphasis Area 2 - Use of Safety Restraints	13
Emphasis Area 3 - Impaired Driving	14
Emphasis Area 4 - Speeding	15
Emphasis Area 5 - Curve Crashes	16
Emphasis Area 6 - Young Drivers (25 and under)	17
Local Coordination	18
Systematic Treatments	18
Continuing Safety Areas	19
Safety Enablers	19
Evaluation	19
Appendix - Supporting data and information	A.1 - A.7



Acknowledgements

This plan was created through the efforts of members of the Wyoming Highway Safety Management System (SMS) Committee.

The contributing Committee members are:

Matt Carlson	State Highway Safety Engineer, Chairman
Tony Laird	State Highway Development Engineer
Martin Kidner	State Planning Engineer/Asset Manager
Mark Williams	District Traffic Engineer
Tim Stark	State Environmental Services Engineer
David Cough	Assistant Division Administrator, FHWA
Mike Bush	Enterprise Technology Program Manager
Mark Eisenhart	State Field Operations Engineer
Paul Jones	Assistant State Traffic Engineer
Capt. Derrick Mickelson	WHP, Safety, Training and Records
Lt. Troy McLees	WHP, Safety Education
Capt. Scot Montgomery	WHP, Motor Carrier
Talbot Hauffe	Planning Consultant, Bike/Ped Coordinator
Mario Ramos	NHTSA Region Representative
Khaled Ksaibati	WYO Local Technical Assistance Program
Steve Dreher	Wyoming Courts System, Chief Information Officer
Andy Gienapp	Emergency Medical Services, Program Manager
John Mulcare	Federal Motor Carrier Safety Administration
James Sims	Cheyenne Metropolitan Planning
Thomas Carpenter	Secretary, Safety Management System Committee



F M C S A
Federal Motor Carrier Safety Administration



www.nhtsa.gov

Wyoming Technology Transfer Center



Local Technical Assistance Program



Adopted: June 20, 2012

A blue ink signature of Matthew D. Carlson, P.E.

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

A blue ink signature of John Cox.

John Cox
Director
Wyoming Department of Transportation

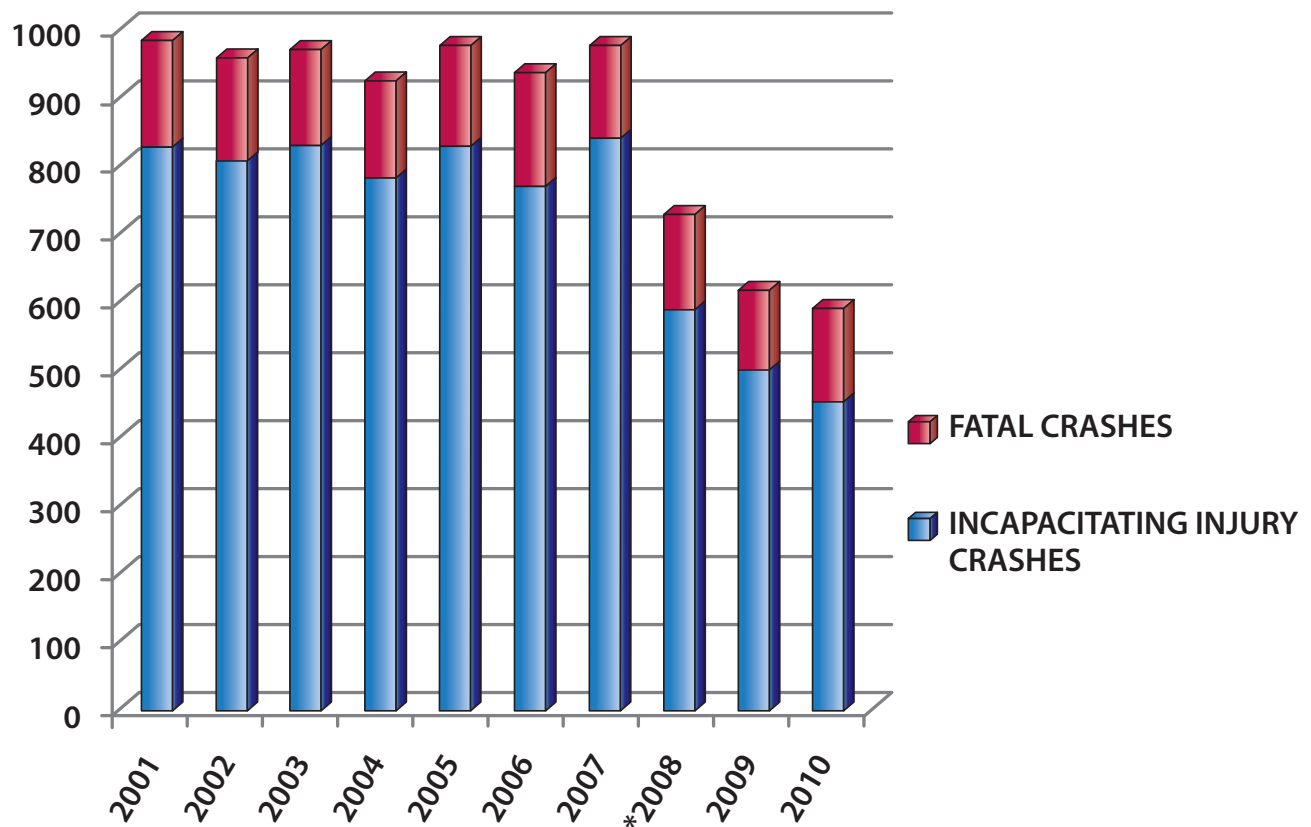
Introduction

Reducing the number of critical crashes is the goal of the Wyoming Strategic Highway Safety Plan (shown as SHSP hence). This plan will improve communication and coordination of safety efforts throughout the State.

Numerous State and Local agencies strive to reduce critical crashes defined as fatal and incapacitating injury (this Plan will use the term “CRITICAL CRASHES” to denote the combination of these crash injury severity types) crashes on Wyoming’s highways. The SHSP will guide current activities and create a future direction for a comprehensive and coordinated approach to improving highway safety by all safety partners in Wyoming.



A measure of the success of the efforts by all safety partners to improve safety will be based on reducing critical crashes on the Wyoming transportation system. Safety efforts in Wyoming will be supportive of the National goal to reduce traffic deaths to ZERO, branded as the “Towards Zero Deaths” (TZD) campaign. The following chart shows the numbers of fatal and incapacitating injury crashes from 2001 to 2010.



* The WYDOT Highway Safety Program rolled out a new Model Minimum Uniform Crash Criteria (MMUCC) compliant electronic crash form on January 1st, 2008. The dramatic drop in the incapacitating injury crashes throughout the state in 2008 was due to the redesigned crash form and improved reporting. Overall crash numbers have declined but only slightly.

The Strategic Highway Safety Plan

The SHSP is the formal documentation of the efforts of many safety partners throughout the state. The SHSP recognizes the importance each discipline plays in improving safety.

The Wyoming Highway Safety Management System through the SMS Committee has accepted the challenge to improve safety on the State's roadways through the development of the SHSP.

Wyoming's safety partners are sometimes separated by many miles yet the coordination and analysis of Traffic Safety issues facing Wyoming is critical in order to reduce crashes. Wyoming uses the technique of hosting Traffic Safety Summits in critical regions throughout the state. These Summits explain the crashes prevalent in the area, the SHSP, and seeks input to construct a SHSP for that region. Any county or region can request a Summit, but at a minimum a summit will be held with the Metropolitan Planning Organizations and the Wind River Indian Reservation.

The SHSP begins with crash data and communicates the direction for all of Wyoming's safety partners. The safety partners are encouraged to continue effective existing activities and pursue new safety strategies and programs that support the overall goal of reducing critical crashes on Wyoming roadways. The process follows six steps:

The first three steps are addressed in the SHSP by the SMS committee:

- 1) Review crash data;
- 2) establish emphasis area direction;
- 3) communicate and coordinate initial strategies to address the emphasis areas.

The next three steps are to be carried out by the various safety partners throughout the State. The safety partners are listed in each safety emphasis area, local coordination efforts, systematic treatments, continuing safety area and safety enablers in this document.

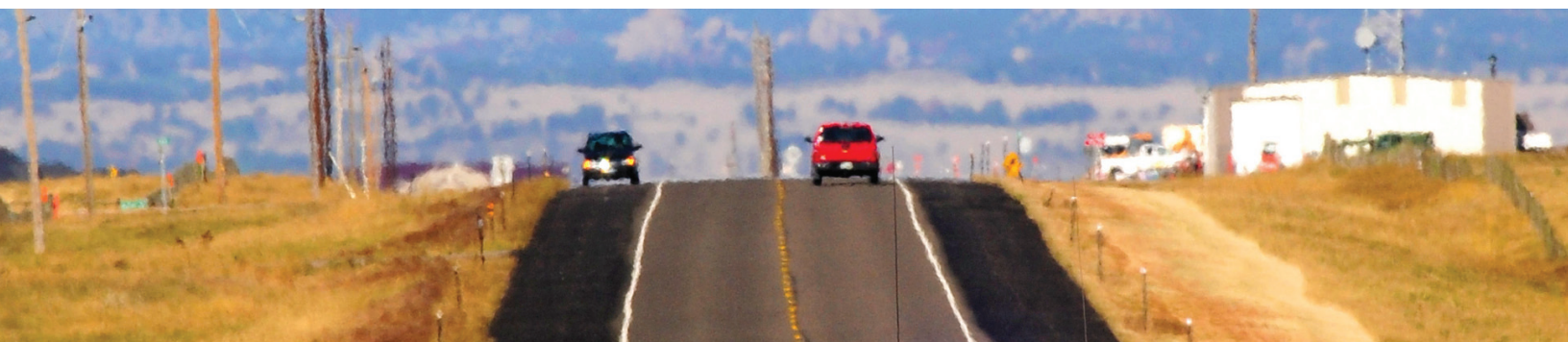
- 4) Develop specific strategies and initial performance measures;
- 5) develop detailed action plans;
- 6) implement the action plans and evaluate the performance of the plans.

The SMS Committee assumed the responsibility to be the coordinating body for the SHSP. The SMS Committee will coordinate the feedback obtained from safety partners that are conducting steps 4-6.

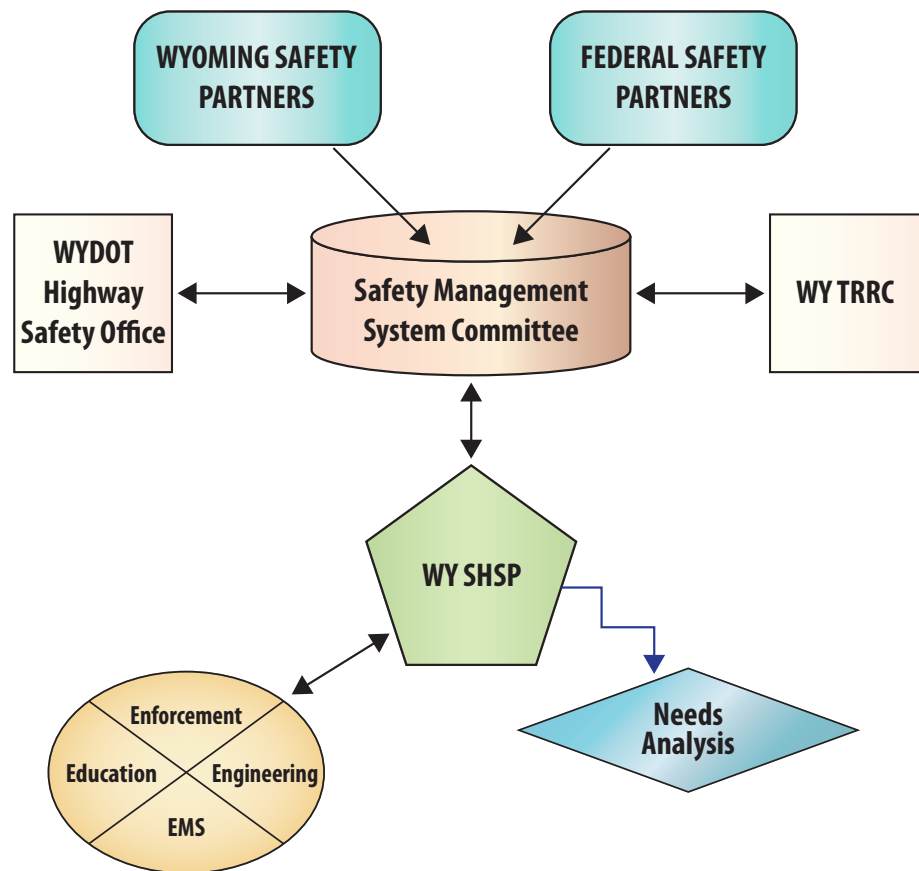
The Purpose

It is important to recognize that the SHSP represents the direction for all Highway safety-related organizations in Wyoming. It cannot be focused on one agency or one specific area of concern.

The purpose of the SHSP is to focus Wyoming's safety partners on reducing the number of critical crashes. The SHSP does not address every safety strategy implemented in the state, but provides the guidance to the safety community to develop and implement the strategies with the greatest potential to reduce critical crashes. The SHSP acts as the guidance document that coordinates the development of specific goals, strategies, and performance measures by the individual agencies and safety partners. It does not replace the existing documents for each agency, but it should coordinate and guide development of other internal documents. The process continues down through the organizations resulting in detailed programs and plans that are implemented and finally evaluated to measure the success of reducing critical crashes.



The following graphic is an example of the relationship of the SHSP to safety groups, processes and programs.



Process

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

Coordination

Partnerships and shared responsibility are basic elements in meeting our critical crash reduction goal. Increased communication, coordination, and cooperation between key state, regional, and local agencies; safety organizations; and safety advocates must facilitate the implementation and deployment of high pay-off strategies based upon the guidance outlined in the SHSP.

Implementation

The SHSP is a collective effort of the transportation and safety agencies and safety partners throughout the state. The SMS Committee will develop the SHSP and encourage safety partners to focus their safety activities and programs in support of the safety goal associated with the SHSP.

Evaluation

The effectiveness of the strategies developed from the guidance in the SHSP will be evaluated through performance measures and program review activities by the safety partner ultimately responsible for developing a detailed action plan for their area of interest. Success of the SHSP will be judged based on the key performance measure of reducing the number of annual critical crashes.

Revision

Upon evaluation and review the SHSP guidance will be revised as necessary to meet the challenges presented by an ever changing transportation system in the State of Wyoming.

Plan Elements

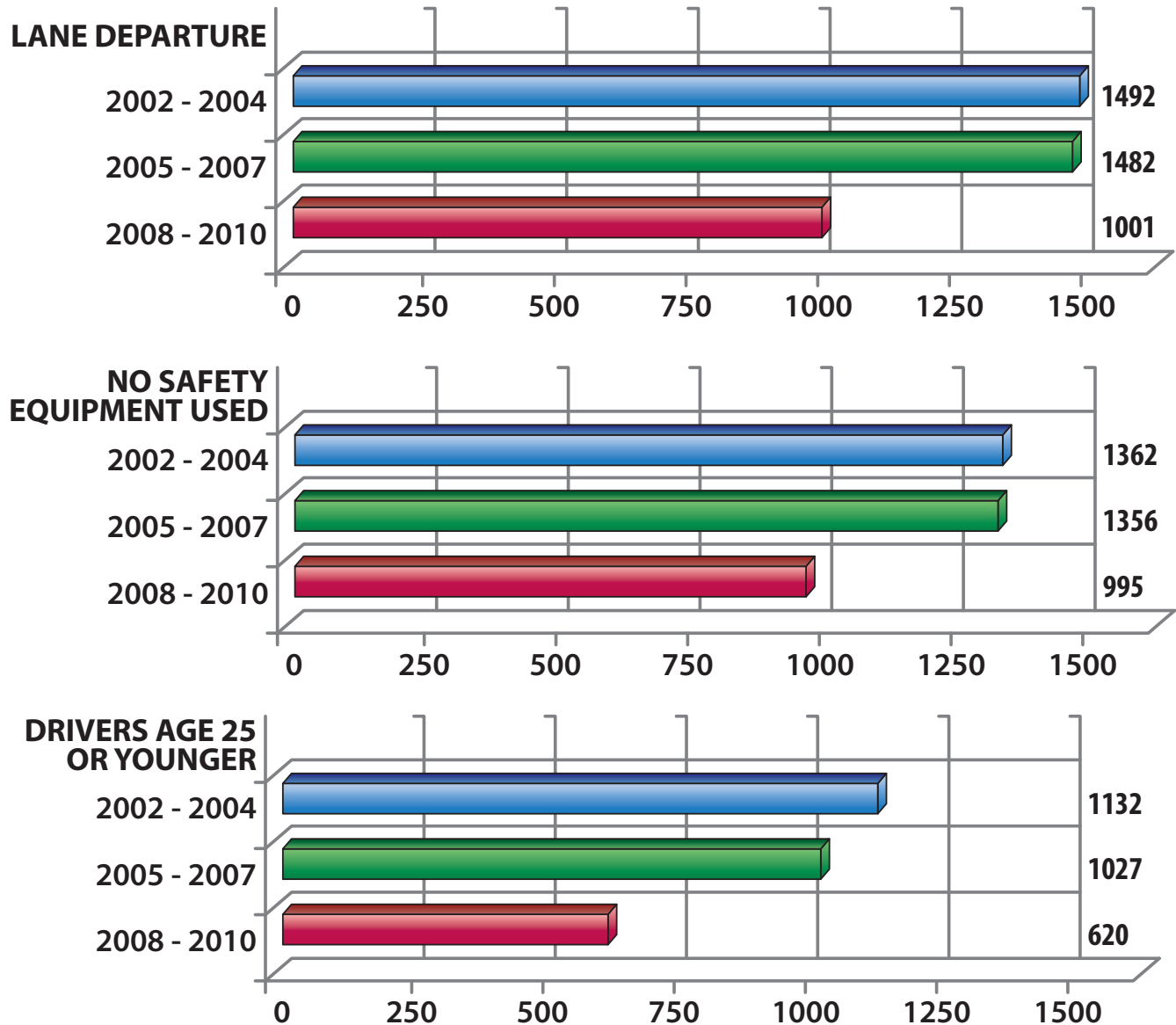
The SHSP is comprised of six separate and interrelated focus areas. Each section of the SHSP (Safety Emphasis Areas, Local Coordination Efforts, Systematic Treatments, Continuing Safety Areas and Safety Enablers) has a different overall direction while maintaining the ultimate goal of reducing critical crashes.

The directions stated in each Safety Emphasis area are the main issues to be addressed in the next five years. An existing strategy, action plan or process will be incorporated for each of the listed strategies. If an existing action plan or a process is not currently being utilized the development of an action plan will be encouraged. The SHSP does not address every safety strategy implemented in the state, but provides the guidance to the safety community to develop and implement the strategies with the greatest potential.



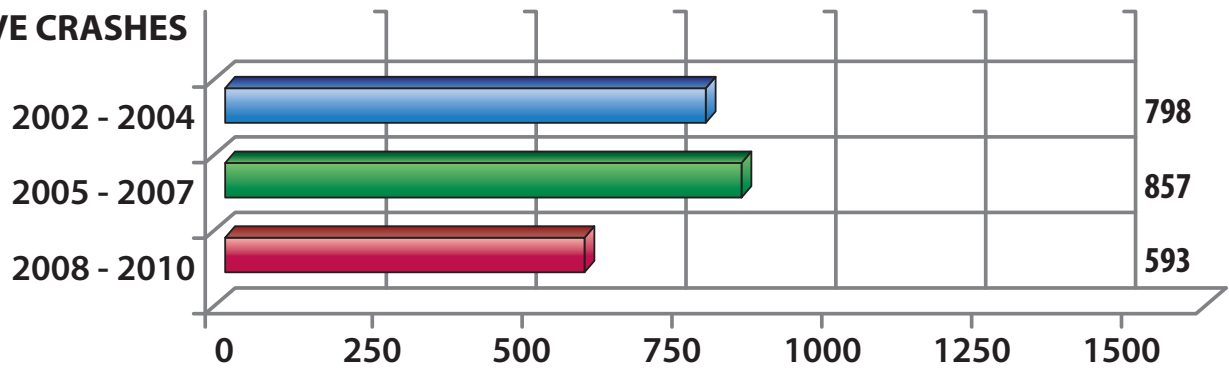
Safety Emphasis Areas

Analysis of Wyoming data indicates the six areas, Roadway Departure Crashes, Use of Safety Restraints, Impaired Driving, Speeding, Young Drivers and Curve Crashes represent the greatest opportunities to reduce critical crashes. All individual organizations have specific interest in one or more of these emphasis areas and meeting the goals contained in the SHSP. Every effort should be made to develop partnerships between organizations.

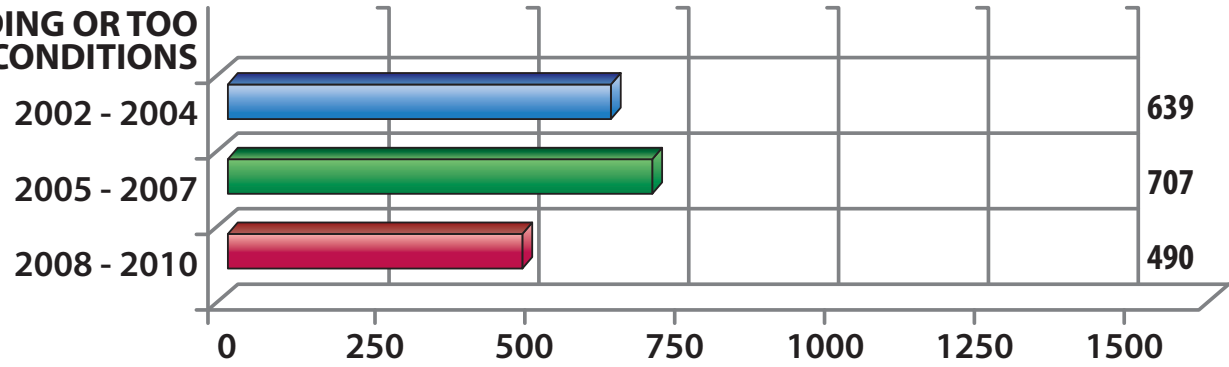




CURVE CRASHES

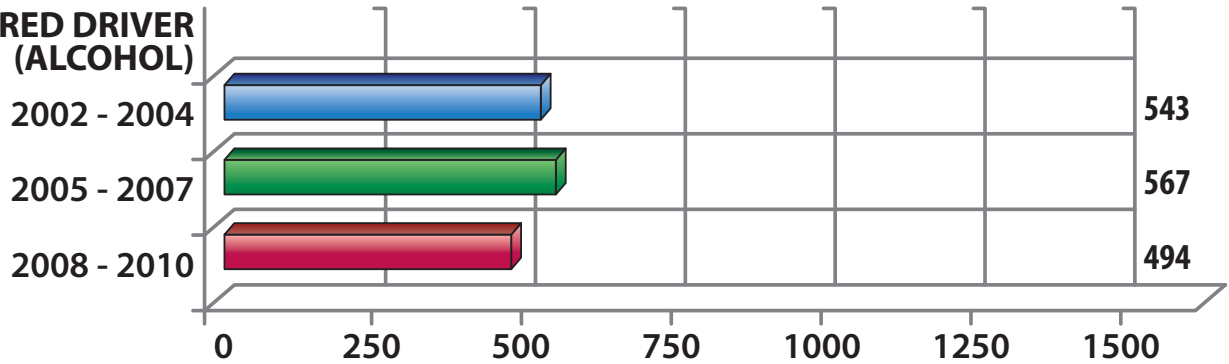


SPEEDING OR TOO FAST FOR CONDITIONS



11

IMPAIRED DRIVER (ALCOHOL)



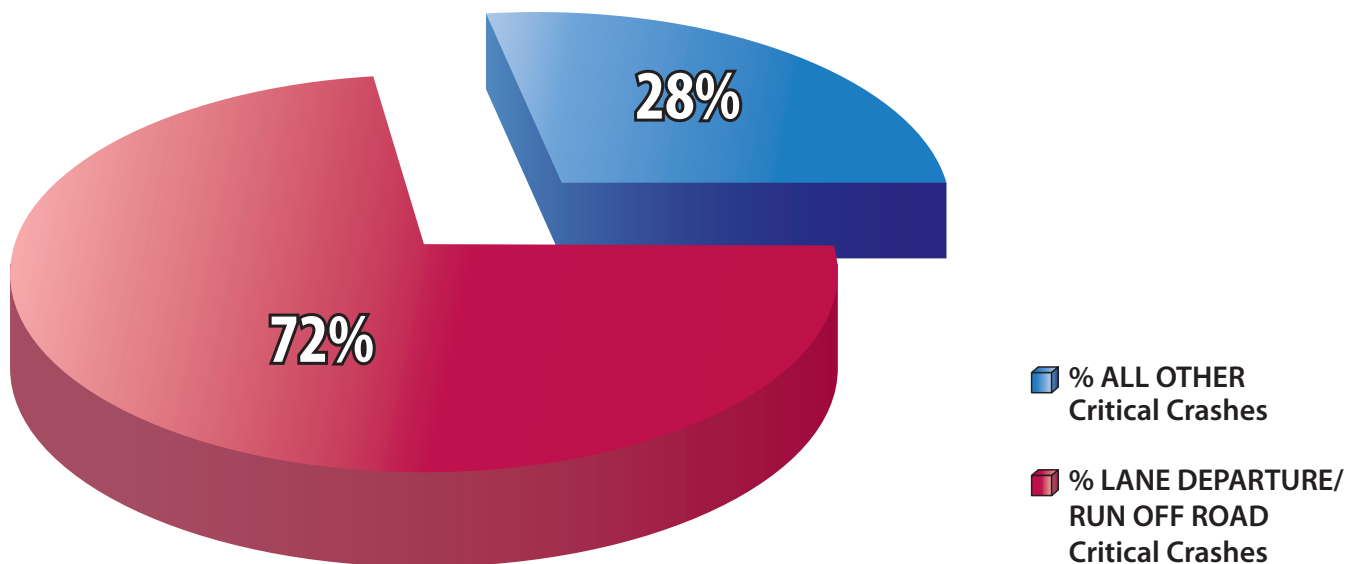
Emphasis Area 1 - Lane & Road Departure Crashes

A roadway departure crash includes those crashes where a vehicle leaves its lane and runs off the road, opposite direction sideswipe crashes and head-on crashes.

Challenge

In Wyoming for the years 2008 - 2010, 72% percent of all critical crashes were associated with Lane Departures/Run-off-the-Road (ROR) crashes. These crashes resulted from driver fatigue, impaired driving, speeding, and distracted driving. While the crash begins with driver error, reductions can often be made by improved delineation, tactile reminders, and a forgiving roadside treatment.

**Percentage of Lane Departure/Run Off Road
in Critical Crashes 2008 - 2010**



Recommendations for Supporting Activities

12

1. Continue implementation of rumble strip policy.
2. Enhance roadway visibility features.
3. Develop and implement guidance on median barrier treatments.
4. Implement an education program on this roadway departure subject.
5. Provide training to local governments.
6. Lessen impacts of leaving the lane with low cost clear zone treatments.

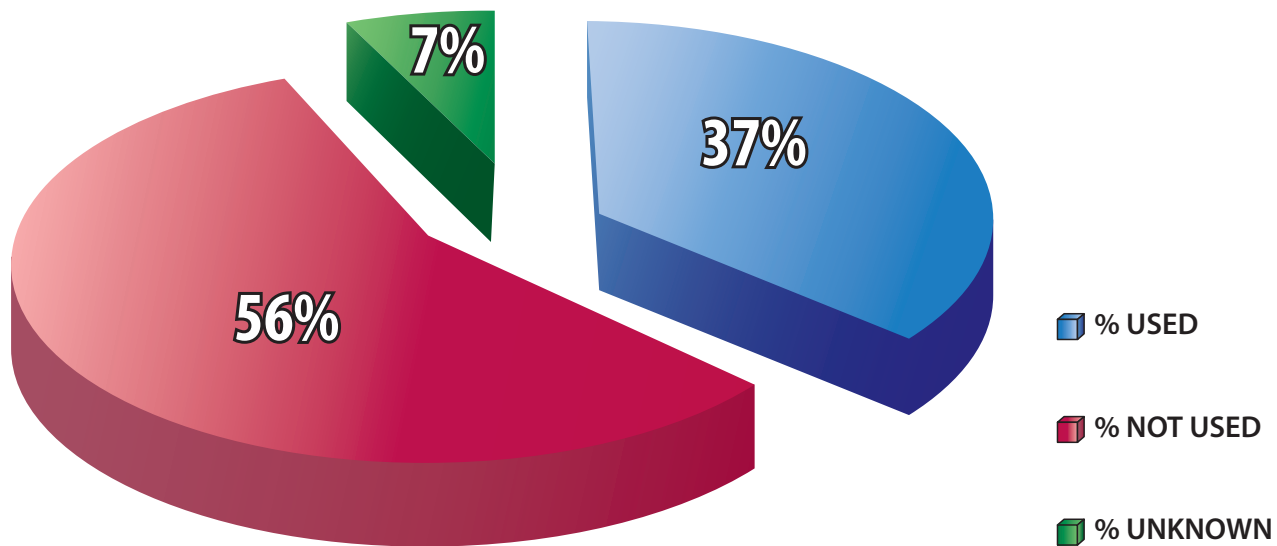
Emphasis Area 2 - Use of Safety Restraints

Seat Belt usage is on the rise in Wyoming, 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 using the roadway system.

Challenge

In 2010, the observed seat belt use in the State was 78.9%. However, 56% percent of the critical crashes from 2008 - 2010 involved a person not wearing a seat belt. 70% percent of fatal crashes involved a motor vehicle occupant killed while not using seat belts for these same years.

Percentage of Seat Belt Usage in Critical Crashes 2008 - 2010



Recommendations for Supporting Activities

1. Conduct seat belt use survey on an annual basis
2. Develop a focused statewide seatbelt campaign.
3. Support national seat belt usage campaigns
4. Continue to work with safety partners to provide training.
5. Support child seat check campaigns.
6. Support the strengthening of seat belt laws.

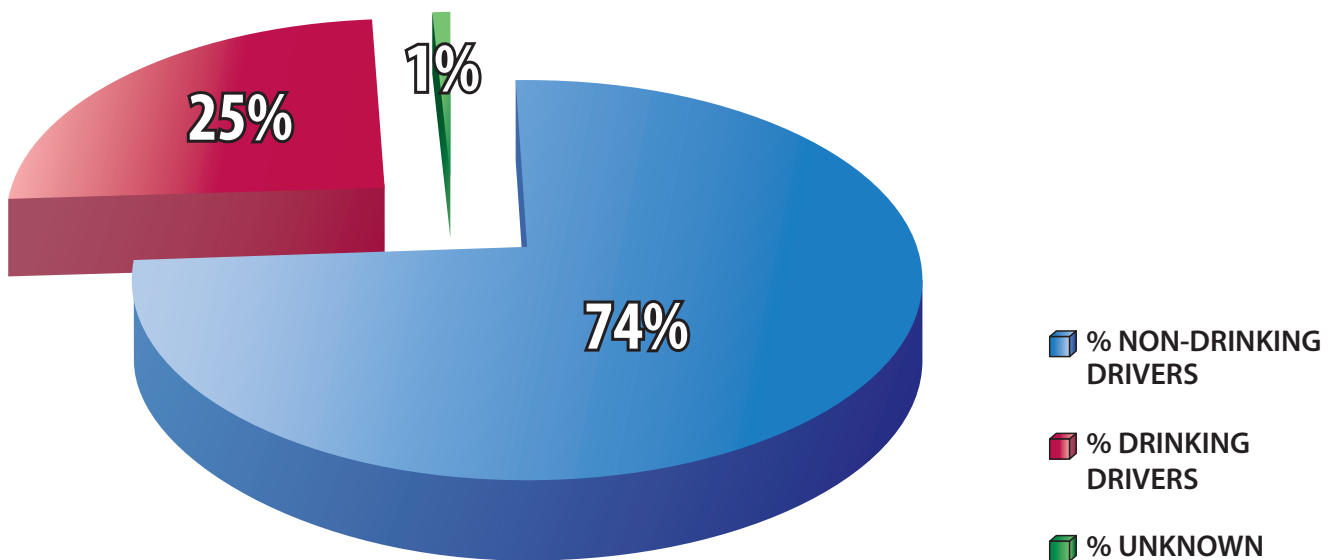
Emphasis Area 3 - Impaired Driving

Impaired driving is an issue that includes both alcohol, illegal drugs and prescription medications used by drivers.

Challenge

For the years of 2008 – 2010, 25% percent of critical crashes had alcohol involved.
40% percent of the fatal crashes in years 2008 – 2010 had alcohol involved.

**Percentage of Alcohol Involved in
Critical Crashes 2008 - 2010**



Recommendations for Supporting Activities

14

1. Support the efforts of the Governor's council on impaired driving.
2. Support the activities of the Highway Safety Grants Office.
3. Support multi-agency statewide law enforcement/public information campaigns.
4. Continue support of programs to reduce DUI in the 21 – 34 age group.
5. Continue support for alcohol/drug/highway safety programs at universities.
6. Provide DUI awareness materials for public distribution.
7. Provide education about DUI legislation.

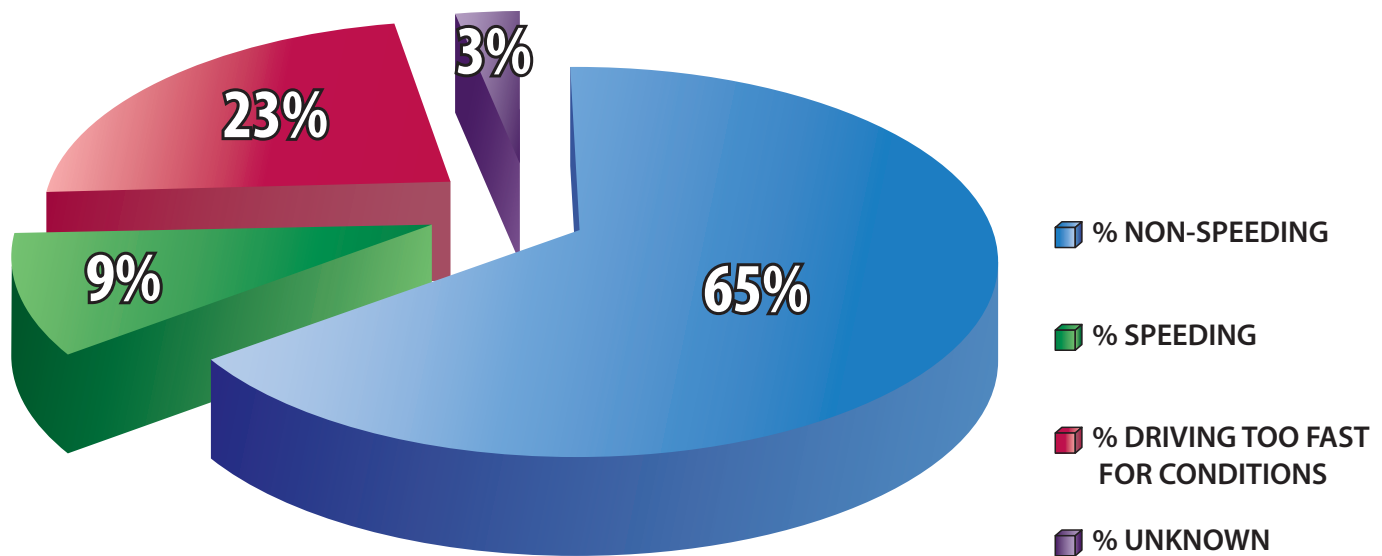
Emphasis Area 4 - Speeding

Speeding is an issue that is predominately a behavioral problem which can be affected mostly by law enforcement and educational efforts. There are engineering factors that do need to be considered when addressing speed as a factor.

Challenge

Speeding can be thought of in two ways; 1) exceeding the posted speed limit and 2) traveling too fast for the conditions of the roadway. Both Speeding at 9% and Driving Too Fast at 23% have been identified as components of critical crashes that occurred in the period 2008 to 2010. This is a total of 32% of critical crashes with speed as a factor.

Percentage of Speeding or Driving Too Fast for Conditions in Critical Crashes 2008 - 2010



Recommendations for Supporting Activities

1. Collect and evaluate additional speed data.
2. Post and monitor appropriate speed limits on all roadways and in work zones.
3. Continue to support speeding enforcement programs.
4. Conduct media campaigns concerning road conditions during different seasons of the year.
5. Support use of ITS devices to communicate roadway information to drivers at decision points.

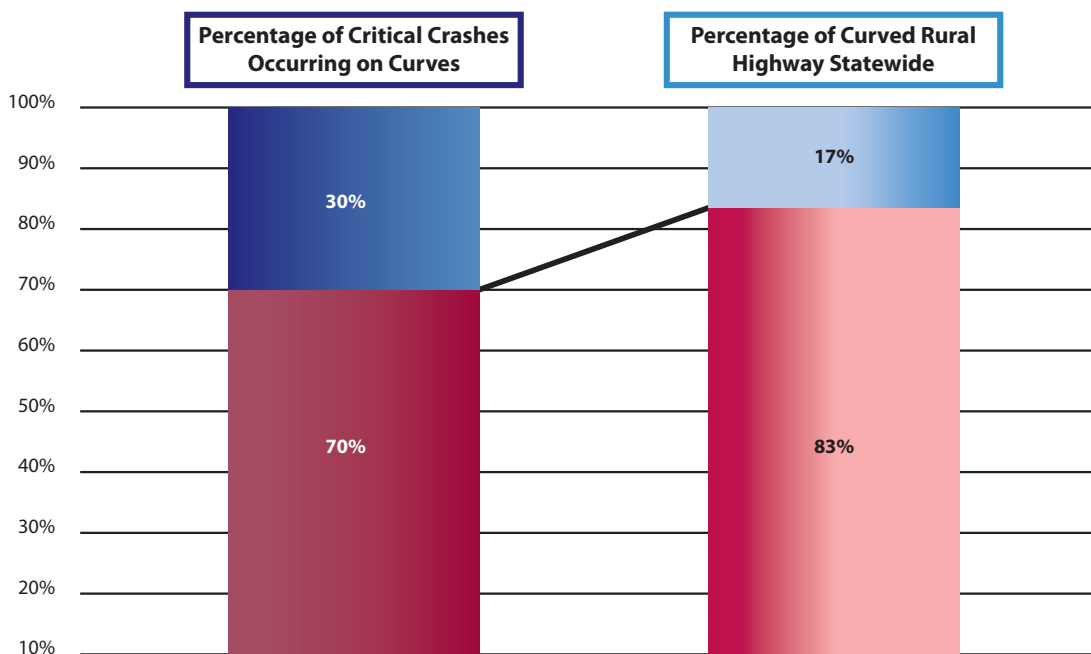
Emphasis Area 5 – Curve Crashes

Curves are a geometric feature of all of our roadways. Proper attention to the factors involved with crashes occurring on curves can point to potential benefits of various remedy options.

Challenge

Critical crashes happen more frequently on some curves than others (see appendix A.6), and especially more than straight sections of the highway. 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. Contributing factors to the severity of these crashes could include other emphasis areas such as lane departure, speed, or impaired driving.

Percentage of Critical Crashes on Curves 2008 - 2010



Recommendations for Supporting Activities

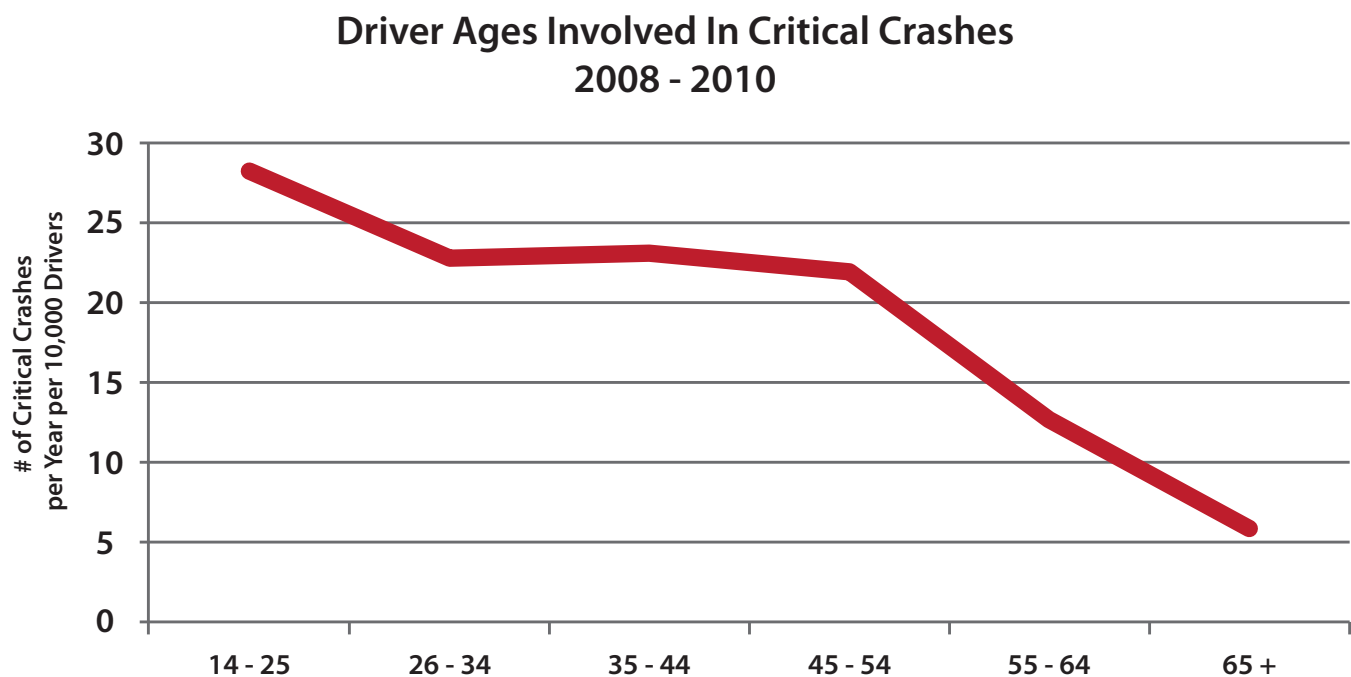
1. Collect and evaluate additional highway feature curve data.
2. Evaluate designs for additional curve warning signs or improve visibility with items such as beacons.
3. Placing of additional delineation and varied types of delineation.
4. Evaluate low cost clear zone corrections such as guardrail improvement.
5. Support use of ITS devices to communicate curve information to drivers at decision points.

Emphasis Area 6 – Young Drivers (25 and Under)

The issue of properly training and educating young drivers about driving and roadways will affect critical crash reduction within the State.

Challenge

Critical crashes occur more frequently in the young driver population. Factors contributing to the severity of these crashes could include other emphasis areas such as lane departure, speed, not using restraints or impaired driving.



Recommendations for Supporting Activities

1. Collect and evaluate additional highway crash data.
2. Continue educational efforts.
3. Support educational programs
4. Evaluate the Graduated Drivers License requirements recently implemented

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 effectively existing safety programs for rural and urban communities in order to address their local safety issues. The safety coordination among locals, state and federal partners will improve transportation safety for the driving public in the State of Wyoming.



The following safety areas are of primary concern to local agencies:

- Intersection Safety
- Bicycle/Pedestrian Safety
- School Zone Safety

However, these are not high frequency areas for critical crashes.

Systematic Treatments

The initiatives and programs contained in this section represent opportunities to improve safety on Wyoming roadways. Many of these programs are new and innovative for the State of Wyoming. These treatments may only show a theoretical 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 could be run off the road crashes. Calculations indicate that rumble strips show a favorable benefit to cost at a system level, but may be difficult identifying spot improvement locations. These projects can receive Highway Safety Improvement dollars based on this system or corridor level analysis.



- Geometric Corrections
- Animal/Vehicle Crashes
- Visibility Improvement
- Guardrail Corrections
- Signing / Pavement Markings

Continuing Safety Areas

Continuing Safety Areas are programs that reflect national or regional goals. Many of these 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.

Work Zone Safety
Highway Freight Safety
Motorcycle Safety
Railroad Crossing Safety
Access Control



Safety Enablers

The foundation to set priorities and have the highest likelihood of reducing critical crashes rest on good data and records processes. While these will not reduce these 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
Traffic Records System



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 considered one that expends resources effectively and efficiently toward the goal of the SHSP to reduce critical crashes.

The Wyoming SMS Committee will monitor the various statewide efforts by annually reviewing:

The Highway Safety Plan (HSP), focus on behavioral activities.
The Highway Safety Improvement Program (HSIP), specifically the Safety Emphasis Program (SEP) and the High Risk Rural Roads Program (HRRR), focus on infrastructure improvement.

The 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.

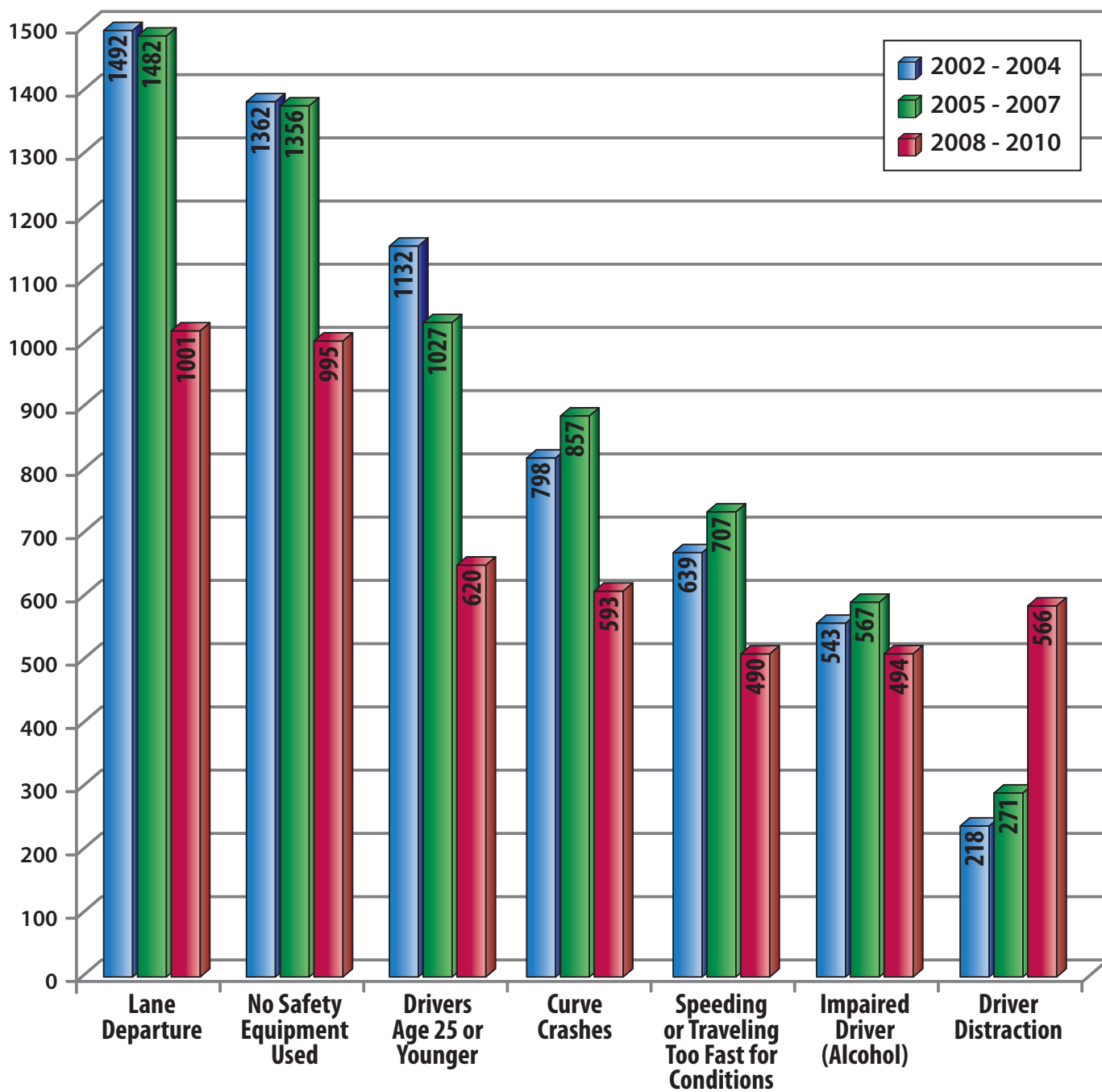


Appendix - Supporting Data and Information

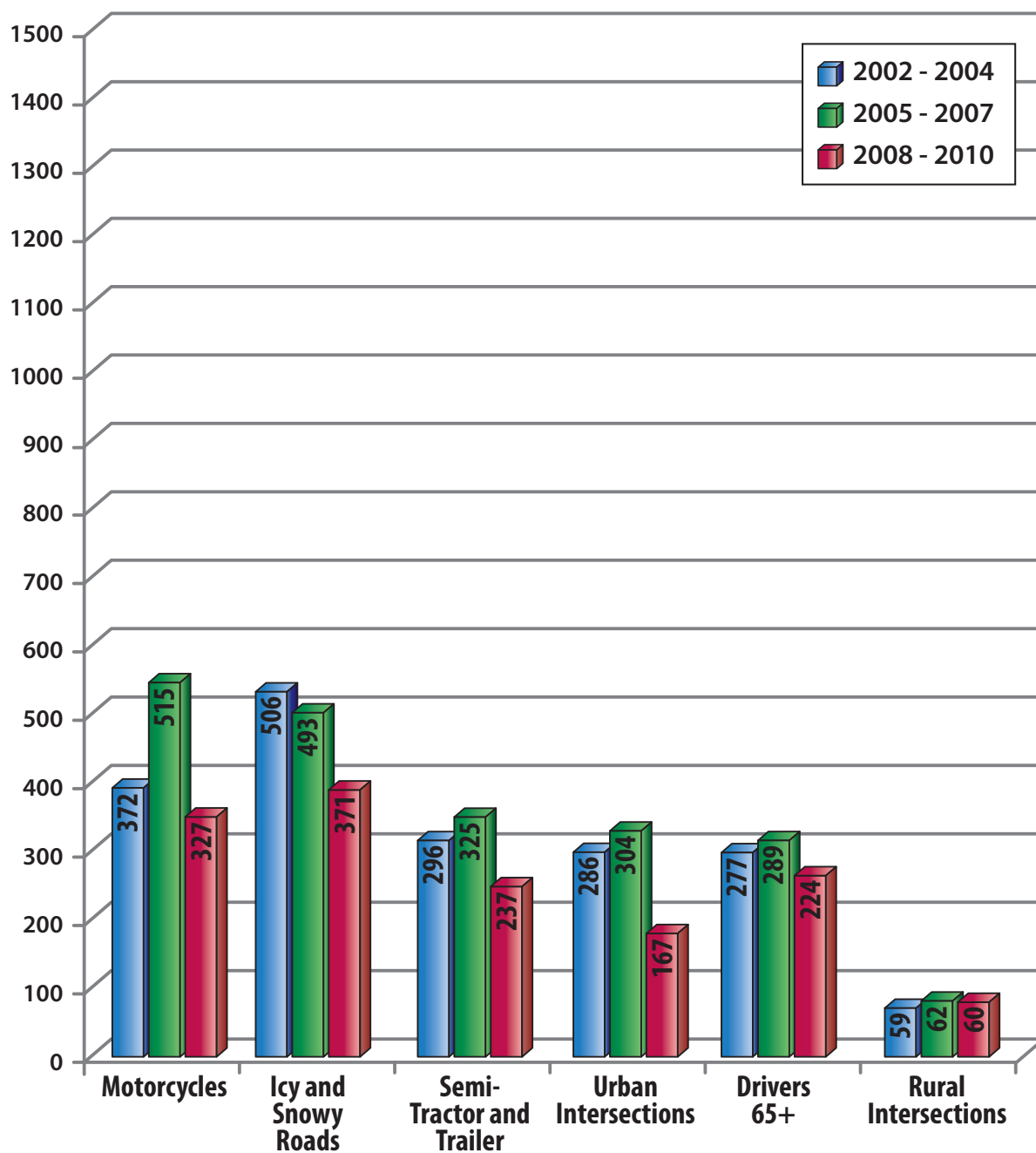
YEAR	INCAPACITATING INJURY CRASHES	FATAL CRASHES	TOTAL CRITICAL CRASHES
2001	828	155	983
2002	809	151	960
2003	831	141	972
2004	783	142	925
2005	830	147	977
2006	770	169	939
2007	841	136	977
*2008	590	139	729
2009	502	116	618
2010	455	137	592

***New Crash Form began January 1st 2008**

**Wyoming's Critical Crashes
(Incapacitating Injury and Fatal)
2002 - 2010**



**Wyoming's Critical Crashes
(Incapacitating Injury and Fatal)
2002 - 2010**



LANE DEPARTURE / RUN-OFF-ROAD CRITICAL CRASHES FIRST HARMFUL EVENT LOCATION 2008 - 2010	
OFF ROAD, PARKING ZONE, MEDIAN, OTHER ROADWAY	823
ON ROADWAY	503
SHOULDER	196
OTHER	10
TOTAL	1532

LANE DEPARTURE / RUN-OFF-ROAD CRITICAL CRASHES – CRASH TYPES 2008 - 2010	
OVERTURN	660
OBSTACLES	541
MV vs. MV	266
PARKED VEHICLE	28
OTHER	37
TOTAL	1532

SEAT BELT USAGE IN FATAL CRASHES 2008 - 2010	
NONE USED	245
SHOULDER & LAP BELT	106
LAP BELT ONLY	2
UNKNOWN	13
<i>Excludes ATV, Motorcycles, Snowmobiles, etc.</i>	

ALCOHOL INVOLVED IN CRITICAL CRASHES BY COLLISION TYPES 2008 - 2010		
COLLISION TYPE	ALCOHOL INVOLVED CRASHES	NO ALCOHOL INVOLVED
SINGLE VEHICLE CRASH	381	940
HEAD-ON CRASH	38	68
OTHER	75	417
UNKNOWN	0	20
TOTAL	494	1445

**ALCOHOL INVOLVED IN CRITICAL CRASHES
BY DAY OF WEEK
2008 - 2010**

DAY OF WEEK	ALCOHOL INVOLVED CRASHES
MONDAY	63
TUESDAY	62
WEDNESDAY	42
THURSDAY	55
FRIDAY	56
SATURDAY	125
SUNDAY	91

**HORIZONTAL ALIGNMENT
IN CRITICAL CRASHES
2008 - 2010**

CURVED DARKNESS UNLIGHTED	177
CURVED DARKNESS LIGHTED	27
CURVED DAYLIGHT (INCLUDES DAWN AND DUSK)	374
STRAIGHT DARKNESS UNLIGHTED	345
STRAIGHT DARKNESS LIGHTED	88
STRAIGHT DAYLIGHT (INCLUDES DAWN AND DUSK)	888
UNKNOWN	40
TOTAL	1939

**ALL ROAD CONDITIONS IN CRITICAL
CRASHES
2008 - 2010**

Road Condition	1st Condition	2nd Condition
Dry	1425	10
Wet	102	18
Ice/Frost	271	49
Snow	76	84
Mud/Dirt/Gravel	29	14
Slush	11	21
Oil/Fuel	0	0
Sand on Dry Pavement	0	1
Sand on Icy Road	4	2
Water Standing/Running	5	4
Other	5	6
Unknown	10	5
Total	1939	214

NOTE: Every crash can have two road condition

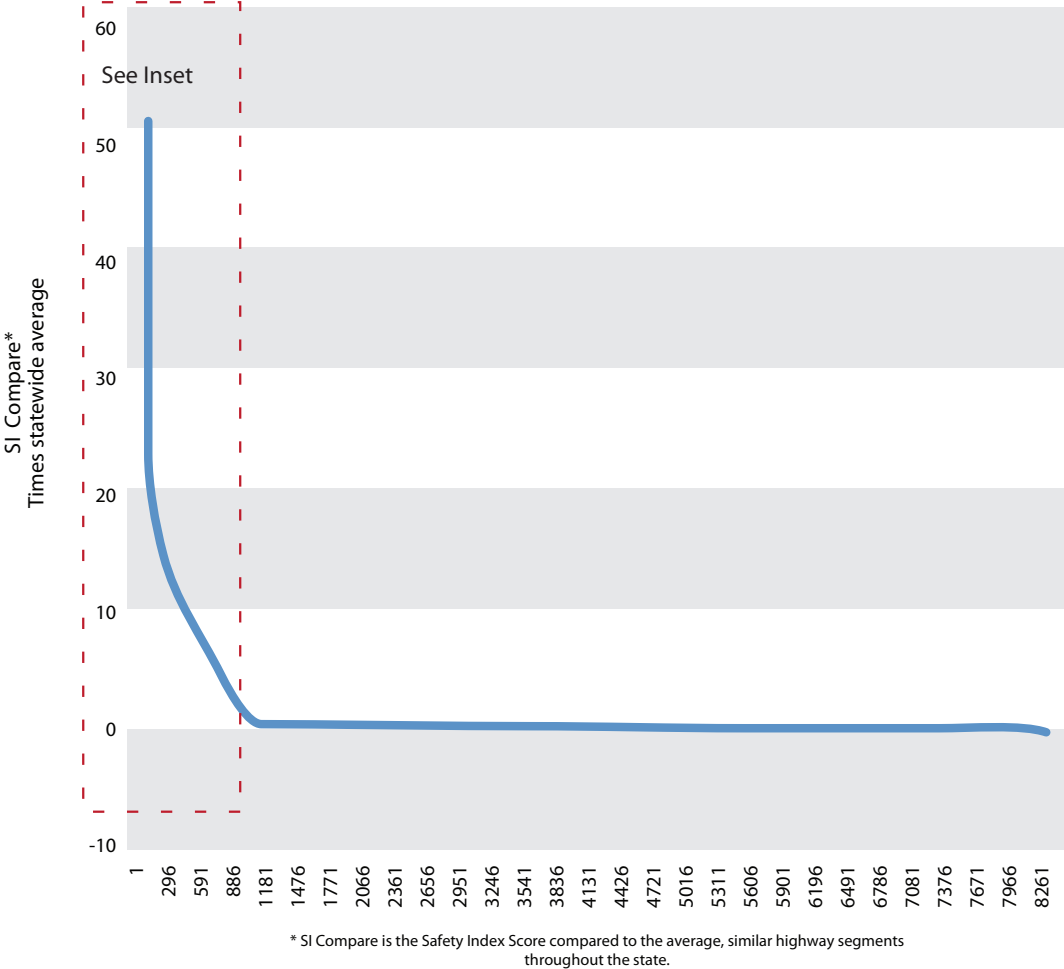
**DRIVER AGES INVOLVED IN CRITICAL CRASHES
2008 – 2010**

AGE	TOTAL CRITICAL CRASHES 2008 - 2010	AVERAGE NUMBER OF LICENSED DRIVERS PER YEAR 2008 - 2010	NUMBER OF CRITICAL CRASHES PER YEAR PER 10,000 DRIVERS
14 - 25	630	75,372	28
26 -34	468	66,618	23
35 – 44	442	64,568	23
45 – 54	537	81,437	22
55 - 64	279	71, 859	13
65 +	112	64,487	6
Unknown Age	22	N.A.	N.A.
Total	2,490	424,341	

**DISTRACTIONS IN DRIVERS AGE 14 TO 25
IN CRITICAL CRASHES
2008 - 2010**

AGE	14-16	17-19	20-22	23-25
NOT DISTRACTED	35	119	102	103
CELL PHONE ETC.	2	5	6	3
DISTRACTION INSIDE M.V.	6	8	9	2
OTHER DISTRACTION OUTSIDE M.V.	1	1	1	6
OTHER ELECTRONIC DEVICE DISTRACTION (COMPUTER, DVD, ETC.)	0	2	1	0
UNKNOWN	25	62	59	62

Pareto Chart - Curve Severity - All Curves



Pareto Chart - Curve Severity - Inset of the Low End

