Wind River Indian Reservation Strategic Safety Management Plan

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ABSTRACT

Fatal and injury crashes have been documented for years to be higher among Native Americans than any other groups across the United States. Studies have been performed to determine the trends and to identify ways to assist Tribes to improve their traffic safety. Tribal transportation stakeholders have recognized the many factors that have contributed to this problem including lack of resources, lack of crash data and crash data accuracy. Their sovereignty presents a challenge with working across jurisdictional lines with state and local agencies.

Strategic highway safety plans are required for states and provide an opportunity for Tribes as well to accomplish their goals to reduce fatal and serious injury crashes. Communication and collaboration across jurisdictional lines is vital to the success of a strategic highway safety plan for Tribal governments. The Wind River Indian Reservation (WRIR) was selected for a pilot (one of three) Tribal Transportation Safety Management Plan (TSMP), a program instituted by the Federal Highway Administration (FHWA) to assist tribes in developing their own strategic plan.

The WRIR has had great success in establishing cooperation among stakeholders and with the support of committed Tribal leadership, is working toward the goal of reducing fatal and serious injury crashes. Key to the success of the TSMP is collaboration among safety stakeholders, namely the state departments of transportation, Tribal leadership, Local Technical Assistance Program (LTAP), Tribal Technical Assistance Program (TTAP), Bureau of Indian Affairs (BIA), and local and Tribal law enforcement, and Indian Health Services (IHS) and others.
INTRODUCTION

The Native American community has suffered greatly over the years with higher fatality rates on their roadways than the general population across the U.S. In a report by the National Center for Statistics & Analysis, fatal crashes in the United States dropped at a rate of 2.2 percent between 1975 and 2002 but on Indian reservations they increased more than 50 percent. Nearly 63 percent of these fatalities involved persons aged 35 years or younger. In 2002, 38 percent of passenger occupant fatalities across the nation were restrained whereas only 16 percent were restrained on Indian reservations. 42 percent of fatal crashes on Indian reservations were related to speeding. Alcohol accounted for 65 percent of fatal crashes since 1982 on reservations (1).

The National Tribal Transportation Safety Summit Report also indicates that among the many safety concerns facing Native Americans on reservation roadways, impaired driving and the use of seat belts/child safety seats are the highest concerns (2). The report also notes that crash data are inadequate for many Indian reservations.

Although fatal crashes in the U.S. have dropped over the past several years, fatal crashes are still a leading cause of death. The mission of the FHWA Office of Safety is to reduce highway fatalities providing information and resources to safety decision-makers and champions. Under the previous highway transportation bill, Safe Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the Highway Safety Improvement Program (HSIP) was established. This program was designed to address the high rate of fatal and serious injury crashes on roadways across the U.S. A major component of the program is a Strategic Highway Safety Plan (SHSP), which is required for all states. The SHSP is a statewide plan that is comprehensive and driven by crash data. It sets goals and objectives, identifying key focus areas and integrating the four E’s of safety (Engineering, Education, Enforcement and Emergency response) (3). This plan is a collaborative process involving the state DOT and other local, state, and federal safety stakeholders.

The Federal Lands Highways (FLH) under the FHWA provides tribal safety initiatives to support the Tribes in their highway safety improvement efforts. The Tribal Transportation Safety Management System (SMS) is a program that encourages communication, coordination, collaboration and cooperation among the safety stakeholders committed to Tribal transportation safety with the goal of implementing effective transportation safety programs to save lives while respecting the American Indian culture and traditions (4). This program includes a SHSP for Indian Lands. It is a model for all tribes to follow and addresses the common concerns found among tribes across the country. The following eight emphasis areas address the safety concerns of reducing fatal and serious injury crashes:

1. Decision making process
2. Data Collection
3. Run off the road crashes
4. Occupant protection/child restraint
5. Alcohol/drug impaired driving
6. Other driver behavioral and awareness
7. Drivers under the age of 35
8. Pedestrian safety

Each of these emphasis areas contains goals and strategies to accomplish them through physical and behavioral solutions. The first emphasis area (decision making process) can be challenging for tribes as they may have to work with safety stakeholders across jurisdictions.
Tribes also need better data collection (second emphasis area). The remaining emphasis areas are data driven.

The State of Wyoming is committed to reducing the number of fatal and serious injury crashes and has established priorities in their Wyoming Strategic Highway Safety Plan (WSHSP) to accomplish this goal. They have established six focus areas based on analysis of crash data which include lane departure, safety equipment use/non-use, young drivers (25 years and younger), curve crashes, speeding and impaired driving. The state is committed to working with local governments to meet this goal and expect all local level partners to implement the plan to the degree possible based on their resources and needs. The coordination efforts set forth in the strategic plan allow the local partners to identify their own specific safety concerns and the best countermeasures for them.

Among the local partners in Wyoming is the WRIR. Both tribal leadership and state officials recognize the need for the reservation to adopt its own safety program that addresses their unique challenges to reduce fatal and serious injury crashes. The emphasis areas identified in the WSHSP, which include roadway departure crashes, use of safety restraints, impaired driving and speeding are also priorities for the WRIR. High risk rural roads, a special safety area addressed in the plan, are a primary focus for the reservation since virtually all of their roadway system is rural.

The WRIR consists of the Eastern Shoshone and Northern Arapaho Tribes who operate their own transportation program and contract with the Bureau of Indian Affairs (BIA) for some transportation functions. The reservation has a land area of approximately 2.2 million acres which encompasses about one third of Fremont County and one fifth of Hot Springs County. The Wind River 2011 Road Inventory Summary lists a total BIA inventory of 1,227.8 miles of roadway, of which 174.7 miles is paved. Like many other Tribal governments, they work with limited resources to manage and maintain their roadway system. Many of the county roads (over 400 miles) are jointly maintained by WRIR transportation and the County Road and Bridge Department. The state maintains roughly 200 miles of U.S. and state highways on the reservation.

The transportation director of the WRIR has worked extensively to coordinate with various government agencies to access funding and resources available to improve the WRIR roadway safety. Efforts between the WRIR transportation authorities, WYDOT and WYT/LTAP became more focused in the fall of 2011 when meetings were held to develop a safety improvement program for high risk crash locations on the reservation. From this several efforts were launched between the agencies to further develop the WRIR safety program.

The FHWA sent out applications in 2011 to all tribes across the country to participate in a pilot Tribal TSMP. This program was set up by FHWA to assist Tribes with the implementation of a comprehensive safety program in partnership with their involved safety organizations. WYT/LTAP provided assistance with the application and the WRIR was selected as one of three pilots.

**OBJECTIVE**

The objective of this paper is to provide an overview of the process necessary to develop a strategic highway safety plan for Indian reservations in order for them to fulfill their goals of reducing fatal and serious injury crashes on Tribal lands. This research is following the development of the pilot Tribal TSMP for the WRIR located in Wyoming. By identifying the
unique challenges Tribal communities face, this research will provide a template for other Tribes to follow in developing their own strategic highway safety plan.

WRIR CRASH ANALYSIS

The analysis of crash data is one of the first steps in developing a roadway safety program. Safety goals and strategies are driven by data that documents the safety problems. Many factors must be reviewed to determine appropriate safety measures. The four E’s of safety must be considered.

A preliminary crash analysis was performed by WYT²/LTAP and compared to statewide local roads and counties of similar size. A similar report presented by the Montana Department of Transportation (7) was utilized in the development of the preliminary analysis. Crash data for the WRIR were analyzed over an eleven year period (2000-2010) and the categories included severity, driver age group, driver gender, first harmful event (FHE), FHE location, safety devices, and driver impairment.

The preliminary analysis revealed several weaknesses with the data. Of the BIA inventory, a total of 245 crashes including county roads were extracted from the database for the eleven year period. Only six roads contained crash data and only 79 crashes were identified with these roads. Crash data on 166 crashes on Indian Reservation Roads (IRR) did not have roadway locations. The low number of reported crashes was determined to be a result of crash reports not being entered into the system. The total number of crashes reported annually for the WRIR dropped sharply after 2006. 36 crashes were reported in 2006, while only 9 were reported in 2010. This indicated that crashes were not being reported properly or somehow not being received by WYDOT.

Efforts among the Tribal transportation personnel, Wind River law enforcement, WYDOT and WYT²/LTAP have resulted in the inclusion of all crash reports from the WRIR. Through the communications developed in the early meetings, it was discovered that the WRIR law enforcement had crash reports on file for the past several years but lacked the ability to transfer these data to WYDOT. The coordinated efforts resulted in inclusion of the back log of reports into the database.

With the additional crash data added to the WYDOT database, crash analysis was again performed. During the time the data were being added, the crash database system was revised and new data sets were released. These data sets began in 2002 and include data through the present. The new analysis was performed for the WRIR and compared to the statewide rural local roads and in some cases all crashes statewide, for a ten year period from 2002 through 2011. Although the numbers were greater, the trends were similar to those found in the preliminary analysis. There were a total of 673 crashes reported for the WRIR and 5316 for statewide rural local roads. The following provide a summary of the crash analysis with respect to crash severity, driver information, causal factors, and other factors.

Crash Severity

The severity of crashes is divided into three categories: critical, serious and property damage only (PDO). Critical crashes include fatalities and incapacitating injuries. Serious crashes include non-incapacitating, minor and possible injuries. PDO crashes include those crashes that had no injuries and incurred damage to the vehicle only. As shown in Figure 1, the statewide trend for severe crashes (critical and serious injury) was slightly lower than that for the WRIR at
31 percent and 37 percent respectively. When the statewide and WRIR crashes are compared, the WRIR had more than two times as many critical crashes.

**Driver Information**

More women were involved in crashes on the WRIR compared to the state (Figure 2). Young drivers ages 34 and younger are significantly high for both the state and the WRIR (55 percent and 58 percent respectively). However, the WRIR had a greater number of young drivers between the ages of 25 and 34 (Figure 3). Alcohol was involved in a greater number of WRIR crashes compared to the state at 23 percent and 13 percent respectively (Figure 4). When comparing the WRIR to all crashes in the state, alcohol was involved more than three times more on the reservation than the state as a whole.

**Causal Factors**

The FHE had similar trends with the exception of a significantly greater number of animal collisions at 24 percent for the WRIR compared to 10 percent for the state (Figure 5). When these were broken down by animal type, farm (cows, horses, pigs, etc.), domestic (dogs and others) and wildlife (deer, elk, moose, etc.), over half of the animal crashes on the WRIR involve farm animals (Table 1). Both farm and wildlife are a significant problem on the reservation. Finally, The FHE location revealed that the state and WRIR trend the same for on- and off-road crashes (Figure 6).

**Other Factors**

Because of the revisions to the crash data sets described previously, speeding and safety equipment use could not be directly analyzed but should be included in future analysis. However, safety equipment use was analyzed under the preliminary analysis (2000-2010) which revealed that state use was much higher than WRIR at 60 percent compared to 34 percent (Figure 7) but a greater number of crashes on the WRIR had an unknown value for use at 40 percent. As safety equipment use relates to critical crashes, the WRIR had a higher rate of critical crashes for non-use than the state (Figure 8).

The revised analysis also revealed that there were no additional crashes on IRR roads and only county roads within the reservation had locations. This reveals that there is still a disparity with the state crash reporting system and the reservation’s ability to capture all crashes in their reporting.

The main issues remain, crash severity is higher on the reservation than throughout the state, alcohol related crashes account for almost a quarter of all crashes, and fixed objects are the highest first harmful event with animals being the greatest risk, and most crashes are occurring off the roadway.

**WRIR STRATEGIC SAFETY PLAN**

The WRIR received notification from FHWA in February, 2012 that they were selected to participate in the pilot Tribal TSMP. The kickoff meeting for the development of the TSMP was conducted in April, 2012. FHWA, Tribal leaders, BIA, WYDOT, WYT/LTAP and the National Highway Transportation Safety Administration (NHTSA) were among the participants. Although participation was high, some key stakeholders were not present including, law enforcement, emergency and health services, and Fremont County. The meeting proceeded with input from Tribal leadership and transportation personnel on the importance of recognizing
safety needs. A vision and mission were established, safety issues were identified, strategies were developed to target the issues, and a partnership agreement was drafted. The following provides an overview of each step.

Vision, Mission and Goals

The Tribal community was very engaged in the process of developing a vision, mission and goals. They understand the problems they face and were decisive in what they want out of this program. The draft vision is to “foster safety awareness and provide safe access throughout the Wind River Indian Reservation for all users and modes of travel”. The mission is “to improve and sustain safety for all modes of transportation through education, enforcement, engineering and emergency medical services strategies”. Three goals were set for the program:

- Raise awareness of transportation safety challenges to promote a positive change in our safety culture.
- Reduce the emotional and physical burden inflicted upon families because of a fatality or serious injury that occur on our transportation system.
- Promote non-motorized travel by improving safety, security, and infrastructure.

These and other versions are still being considered and should be finalized at the next stakeholders meeting. A common theme that is evident in the vision, mission and goals is the concern for pedestrian safety and one emphasis area is dedicated to the safety of the walking community.

Communication, Coordination and Cooperation

In order for any tribal transportation program to be a success, there must be open communication, extensive coordination efforts as well as full cooperation among the many agencies involved. “Cooperation on transportation issues is affected by complex issues such as tribal sovereignty, intergovernmental agreements, jurisdiction, regional planning efforts, right-of-way acquisition, funding, and maintenance. Similarly, planning, design, and implementation of transportation projects require collaboration among tribal, federal, and state agencies.” (8). Collaboration is essential among the tribal, federal, state and local governments to implement a comprehensive safety program. This is why so many stakeholders are necessary in the development of the strategic plan. Buy-in is absolutely necessary by every stakeholder.

One of the first steps in developing the strategic plan was to identify the many stakeholders and how much communication and coordination has taken place in the past. By identifying these levels of communication, the strengths and weaknesses could be easily identified. The stakeholders were grouped into eight categories:

- Transportation safety advocates which included tribal leadership
- Traffic engineering/safety professionals
- Traffic law adjudication professionals
- Driver education curriculum management
- Traffic law enforcement professionals
- Health department professionals
- Emergency Medical Services (EMS) professionals
- Other safety stakeholders

There is strong coordination among the traffic engineering/safety professionals and between them and the safety advocates, the driver education curriculum management and traffic
law enforcement professionals. However, very little communication exists between the various
groups and the health and EMS professionals. This was evidenced by the lack of participation
from these groups. Also, more cooperation and coordination is needed between the tribal law
enforcement and the state and county counterparts.

Identification of Safety Issues and Concerns

The safety stakeholders were asked to identify safety issues and concerns during the initial part
of the kickoff meeting. They included such issues as behavioral, roadway, vehicle, weather,
non-motorized and others.

Among the many issues and concerns by the WRIR, behavioral safety issues were by far
their greatest concern. Speed, restraint use, distracted and impaired driving, underage,
unlicensed, and young drivers were the focus of the behavioral issues. These are major concerns
that have been identified throughout the Indian nations across the country as previously reported
from the National Tribal Transportation Safety Summit (2). As a primary concern, the
stakeholders recognized that in order to tackle the behavioral issues, the safety culture must
change. This was addressed in the strategies as well as identified as a primary goal of the TSMP.

The other issues identified in the plan are roadway safety, vehicle safety, weather and
environmental, non-motorized (bicycle and pedestrian) and other issues which include EMS
response and limited resources. Pedestrian safety on their rural roadways is a primary concern
because many residents walk. Limited facilities are available and many walk along the rural
highways unprotected.

Emphasis Areas and Strategies

From the above safety issues, specific emphasis areas were identified and strategies were
developed to address them. These strategies were grouped into eight emphasis areas:

1. Safety data
2. Emergency services
3. Roadway infrastructure
4. Safety restraints
5. Impaired driving
6. Speeding
7. Pedestrians and bicycles
8. Young driver safety

These focus areas are complimentary to the WSHSP. Lane departures and curve crashes
in the WSHSP is comparable to roadway infrastructure in the WRIR TSMP. Safety equipment,
young drivers, speeding and impaired driving directly correlate with the state strategies. See
Table 2 for these comparisons. These strategies are data driven. As discussed previously, with
the exception of speeding, crash data analysis supports these emphasis areas (Table 3).
However, speeding is a well-documented problem that can be verified through the citation
records of law enforcement.

The goal established for safety data is to improve the completeness and accuracy of
safety data to support the decision-making process. There are major discrepancies in the
reporting of crashes and strategies are being developed to improve crash reporting. Improving
the communication and collaboration among law enforcement is a key element in capturing all
crashes. Integration of data through GIS is underway to link roadway, traffic volume and crash
data. These elements are identified in the plan.
Improving the quality and efficiency of emergency services is the goal of the second emphasis area, emergency services. Response time has been a major problem for the WRIR. Information on EMS response times within the WRIR indicates a 40-60 minute response time from the responder location within the highway network to the accidents and then to the medical service provider. Factors which influence this response time are: 1.) Fremont County Fire District is comprised of rural volunteer fire departments and must be summoned by siren and/or pagers to respond for duty, and 2.) The WRIR does not have a fire station house within its boundary. EMS responders come from Fort Washakie, Milford, Kinnear, or Riverton fire stations, which are, at a minimum, 20 miles from the geographic center of the WRIR. The same 20 miles must then be traveled back to either Riverton Memorial Hospital or Lander Medical Center for emergency care/Life Flight services. A 30-minute increase means half that time is wasted on driving. A review and modification of the dispatch protocols is one strategy that will improve this situation. Another strategy that will require greater resources is the addition of medical facilities or dispatch stations.

The goal for the roadway infrastructure is to improve the design and maintenance practices to reduce the frequency and severity of crashes. WYT²/LTAP has been working on developing a safety improvement program to assist the WRIR to identify and prioritize low cost safety improvements on their roadways. This program, known as the Indian Reservation Roadway Safety Program (IRRSP), is currently underway and initial implementation should be completed by fall 2012. By implementing the IRRSP, many low-cost safety improvements can be identified. Coordination with Fremont County is also necessary to establish maintenance responsibilities and possibly transfer ownership of county roads on the reservation to the WRIR transportation agency. County representatives were not present at the initial meeting.

For the two emphasis areas, safety restraint and impaired driving, changing the safety culture was determined to be the primary strategy to employ to increase restraint use and reduce the prevalence of impaired driving. Educational campaigns are ongoing and will continue that are directed to the Indian community. Media campaigns, targeted enforcement, more education partnering with Injury Prevention Resources, and imposing stronger sentences to offenders in a blitz type manor will begin to impact the cultural attitude of transportation safety. Reducing speeds to minimize the severity of crashes is the goal of the sixth emphasis area. A review of the existing posted speeds and a comprehensive speed study throughout the reservation will help determine appropriate speeds and identify where traffic calming measures could be employed.

Pedestrian and bicycles are an emphasis area for which strategies are identified to reduce the conflict between these users and vehicles by providing designated facilities. The WRIR is in the process of implementing a Pedestrian and Walkway Long Range Transportation Plan. Including it in the strategic plan will help ensure that it will receive the needed attention. Other strategies are identified to achieve the goal for pedestrians and bicyclists which include the addition of crossings, promotion of bike rodeos and education efforts in the schools.

Young driver safety is the last emphasis area with the goal to reduce the prevalence of crashes involving young drivers. As identified from the crash data, 33 percent of all crashes on the reservation between 2001 and 2010 were drivers under the age of 25. Including those under the age of 35 increases it to 58 percent. Education and enforcement of distracted driving are the main strategies to address this.
Roles and Responsibilities

In order to carry out the TSMP successfully, roles and responsibilities need to be identified and assigned to the appropriate stakeholders. This is an integral part of coordination and collaboration. The following areas of responsibility were identified:

- Traffic engineering
- Driver education
- Law enforcement
- Fire/emergency medical services
- Data management

The traffic engineering partners include the Shoshone and Arapaho Department of Transportation (SADOT), WYT²/LTAP, TTAP, WYDOT, BIA and consultants. SADOT will obtain and provide traffic, crash and roadway data. WYT²/LTAP will provide evaluation of high risk locations, BIA will provide technical assistance and consultants will provide engineering services.

The driver education partners include SADOT, WYT²/LTAP, TTAP, WYDOT, BIA law enforcement, injury prevention resources, school superintendents and children advisory groups. WYT²/LTAP will provide crash analysis and recommendations for behavioral safety improvements to SADOT and BIA. SADOT and BIA will provide the educational opportunities for drivers. Partners will team with WYDOT as necessary for media and educational campaigns.

Law enforcement partners include the Wind River Police Department (WRPD), WYDOT, local law enforcement, tribal courts, BIA law enforcement, County Coroner and State Highway Patrol. WRPD will provide law enforcement, teaming with WYDOT to improve crash reporting and strengthen partnerships with local law enforcement. Tribal courts will support law enforcement and enforce penalties.

Fire and emergency medical services partners include the Wind River Indian Health Services (WRIHS), Fremont County Fire Department, and first responders. WRIHS and Fremont County Fire Department provide the emergency medical services. The need to improve response time is recognized.

Lastly, the data management partners are SADOT, WYDOT, WRPD, WYT²/LTAP, BIA law enforcement and the County Coroner. WYDOT manages the crash data. WRPD submits crash data directly to WYDOT and is working to improve the process. WYT²/LTAP coordinates with BIA and WYDOT to retrieve any records not submitted electronically.

As recognized under the communications section of the TSMP, the roles and responsibilities require great cooperation and collaboration. Many weaknesses were identified in the communication among the various stakeholders and further development is necessary to ensure the roles and responsibilities are carried out successfully.

Next Steps

In order to move forward in the implementation of the TSMP, additional coordination is necessary. The stakeholders will meet again to finalize and sign the partnering agreement. The benefit of the partnering agreement is the development of lasting relationships and responsibilities. These can last beyond specific personnel that may change jobs or retire and it sets up long-term partnerships by defining roles and responsibilities. The agreement includes the vision, mission and goals of the plan. It identifies the executive committee responsible to commit to the plan and includes all major stakeholders, including the Joint Tribal Business
Council. The plan must be reviewed, responsible stakeholders assigned, funding options identified and opportunities to enhance the communication, coordination and cooperation must be sought.

Tremendous progress has been made, but there is still much to do in order to have a functional and effective TSMP. The Tribal community and many of the safety stakeholders are optimistic in being able to carry it out. The greatest challenges are to foster the cooperation and collaboration of all stakeholders and secure the resources necessary to carry it out.

**SUMMARY AND CONCLUSIONS**

Reducing fatal and serious injury crashes is a primary transportation safety goal for the federal, state, local, and Tribal governments. There has been extensive research and data collected on the higher crash fatality rates among American Indians on Tribal lands. Although efforts have been made to assist Tribes with improving roadway safety on reservations, they have not been to the level needed to realize significant decrease in fatal and serious injuries. As sovereign nations, they face different challenges than a typical American community. However, there are many similarities in the crash statistics between rural local roads and tribal roads. Crash trends on Indian reservations indicate that speeding, impaired driving and safety equipment use are the highest concerns among American Indians.

A strategic highway safety plan is required of all states and is just as necessary for Tribal governments. Federal Lands Highways under the FHWA has developed an SHSP for Indian Lands that addresses the unique safety concerns for Native Americans. The FHWA has provided a pilot program to invite three tribes across the country to participate in the development of a Tribal TSMP for their roadways. The WRIR was selected for the pilot program and work has begun on their TSMP. These plans require communication, cooperation and collaboration of all safety stakeholders. The success of their safety programs is dependent on coordination across jurisdictional lines.

Crash data are essential to the development of a strategic plan to identify the weaknesses and safety issues that are resulting in fatal and injury crashes. Tribal leadership has recognized for some time the lack and incompleteness of crash data. Improving crash data collection and management has become an emphasis area SHSPs for Tribal lands.

The WRIR held its first stakeholders meeting and has a TSMP drafted. Strong support from the Tribal leadership as well as many of the safety stakeholders was demonstrated. The group was engaged and extremely focused on developing a vision, mission and goals. Emphasis areas were developed and strategies were identified to address specific issues and concerns.

Based on crash data, use of safety equipment, impaired driving and young drivers were targeted for behavioral improvements. The group recognized that the success of implementing behavioral improvements is dependent of successfully changing the safety culture. Pedestrian access is a major concern for the WRIR and they were resolute in including their pedestrian long range plan as an emphasis area to implement and carry it out. Work has been ongoing in improving crash reporting and is an emphasis area in the plan to continue the efforts. The main weakness recognized was some stakeholders have not been involved and communications need to be improved.

Safety partners working together can make these strategic plans a reality for Tribal governments across the country. The federal and state governments have extensive resources in expertise and personnel that can facilitate the development of these plans. As states include Tribal lands in their strategic plans, it commits them to a partnership necessary to improve traffic
safety on all roadways within their state including those on Tribal lands. Tribal leadership recognizes the safety concerns and the limited resources they have to work with to fulfill their goal of reducing fatal and serious injury crashes; strategic plans are one opportunity to help direct limited resources efficiently to address the identified road safety issues.

ACKNOWLEDGEMENTS

The work to develop the TSMP has been a collaborative effort between WYT²/LTAP, WYDOT, SADOT and FHWA. The many safety stakeholders have committed much time to its success. The Tribal leadership from the Eastern Shoshone and the Northern Arapaho tribes has been very supportive and active in its development.

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Figure 5: First Harmful Event 2002-2011

Figure 6: First Harmful Event Location 2002-2011
Figure 7: Safety Equipment Use 2000-2010

Figure 8: Safety Equipment Use related to Critical Crashes 2000-2010
Table 1: Animal Crashes

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<th>Animal Type</th>
<th>State 10% of all crashes</th>
<th>WRIR 24% of all crashes</th>
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<tr>
<td>Farm</td>
<td>37%</td>
<td>55%</td>
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<td>Domestic</td>
<td>1%</td>
<td>4%</td>
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<tr>
<td>Wild</td>
<td>62%</td>
<td>41%</td>
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Table 2: Strategic Highway Safety Plan Focus Areas Comparison

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<tr>
<th>Focus Areas</th>
<th>WSHSP</th>
<th>WRIR</th>
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<tr>
<td>Lane Departure</td>
<td>Safety Equipment</td>
<td>Safety Equipment</td>
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<tr>
<td></td>
<td>Young Drivers</td>
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<td>Curve Crashes</td>
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<td>Emergency Services</td>
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<td>Pedestrian and Bicycles</td>
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Table 3: Crash Data Results for Focus Areas

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<thead>
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<th>Focus Areas</th>
<th>WRIR Crashes 2002-2011</th>
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<tr>
<td>Run Off Road/Lane Departure</td>
<td>41%</td>
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<tr>
<td>Use of Safety Restraint*</td>
<td>26%</td>
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<tr>
<td>Alcohol Involved</td>
<td>23%</td>
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<tr>
<td>Speeding/Driving too fast</td>
<td>Not yet analyzed</td>
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<td>Young Drivers</td>
<td>33%</td>
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* From preliminary analysis for 2000-2010, 40% reported unknown