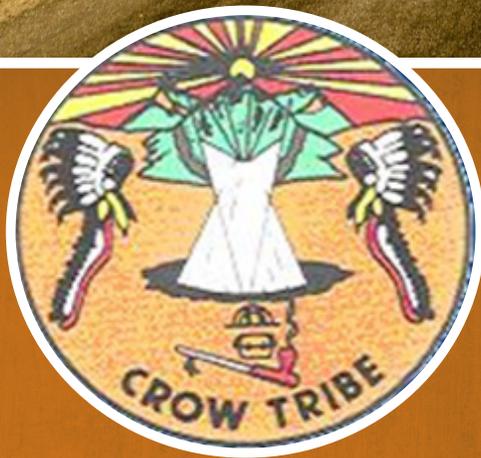


# CROW TRIBE

## 2015 TRIBAL TRANSPORTATION SAFETY PLAN



Developed through the  
Crow Tribal Transportation  
Department

Prepared by KLJ

2015



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## EXECUTIVE SUMMARY

From 1996 to 2012, there were approximately 1,265 traffic crashes on the Crow Reservation resulting in 101 fatalities and 1,087 injuries according to data from the State of Montana. A large number of these crashes occurred on I-90 due to high traffic volumes on the roadway. While the trend for all types of crashes is in a positive direction, the numbers of individuals being injured or killed is still significant.

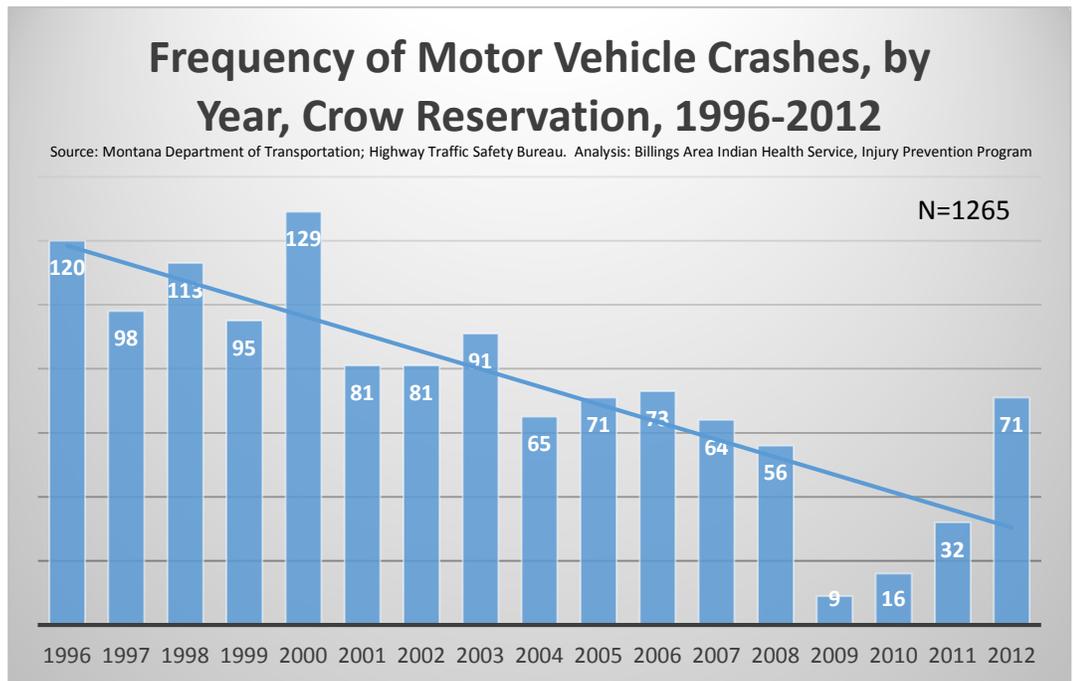


Figure 1 – Frequency of Motor Vehicle Crashes by Year

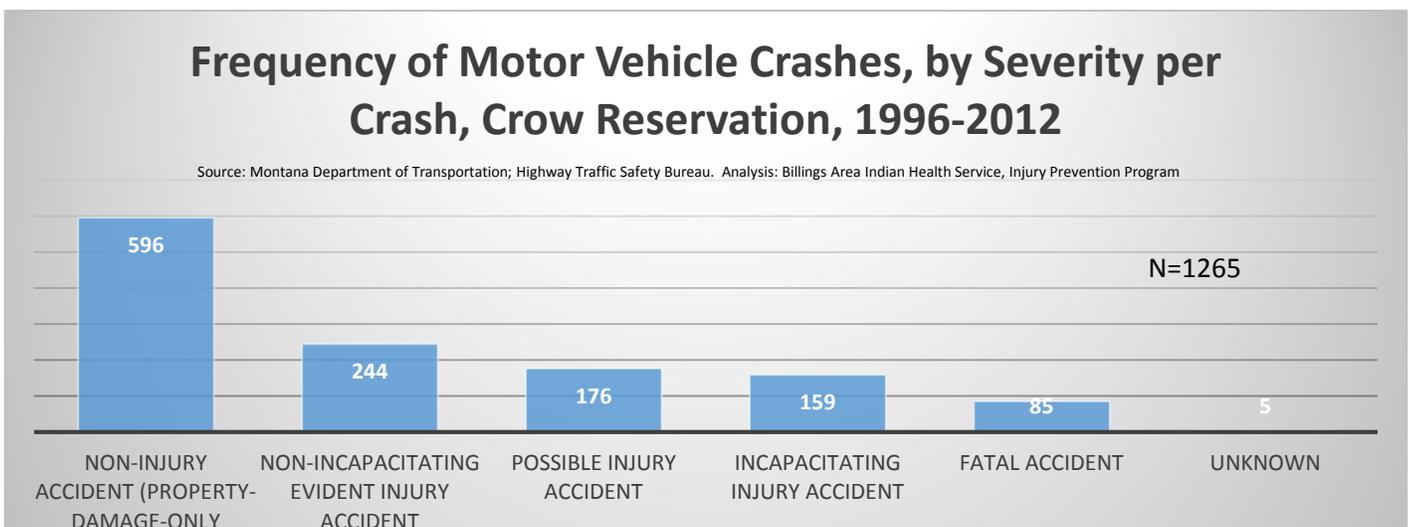


Figure 2 – Frequency of Motor Vehicle Crashes by Severity per Crash

In an effort to reduce the number of fatalities and injuries and improve the overall safety of the transportation system on the Reservation, the Crow Nation developed a Transportation Safety Management Plan (TSMP) in 2008. The original plan identified a number of strategies to reduce these terrible events, including hiring a Safe On All Roads (SOAR) Coordinator, developing a Tribal Traffic Code and implementing a cross

jurisdictional agreement. Progress has been shown, but as injury and fatality data showed, there is still much work to be done.

In 2015 the Crow Nation undertook efforts to update this initial plan. This update culminated a stakeholder meeting where Tribal, city, county, state, federal and interested parties came together to review existing data and ongoing safety efforts, and to identify new or continuing strategies to improve transportation safety in Crow Tribal communities. The strategies were prioritized around the 4Es (Education, Enforcement, Emergency response and Engineering) of safety. The 4Es are outlined below.

### Education

- Continue and Expand the Reservation-Wide Transportation Education Program
- Establish a Youth Drivers Education Program
- Utilize the Seat Belt Sled and other Safety Demonstration Devices

### Enforcement

- Obtain and Upgrade Communications Equipment
- Develop Road Closure Procedures with the Montana Department of Transportation (MDT) and Montana Highway Patrol
- Establish a DUI-Funded Youth Education Program

### EMS

- Provide Reservation Wide-Street and House Numbering Program to Enhance 911 Response
- Develop a Memorandum of Agreement (MOA) for Fire Response

### Engineering

- Develop a Reservation-Wide Highway Signing and Marking Project
- Establish a Highway Fencing Program
- Perform Road Safety Audits on Bureau of Indian Affairs (BIA), Tribal and County Roads
- Perform Railroad Safety Audits at BIA, Tribal and Local Road Crossings
- Develop Multi-Use Pathways and Sidewalks
- Implement Safety Countermeasures on Pryor Road

### Safety Planning/Other

- Collect and Share Crash Data

## BACKGROUND

The Crow Indian Reservation was established in 1868 and is the homeland of the Crow Tribe. The Reservation encompasses approximately 2.3 million acres (3,566 square miles) in southcentral Montana and sits on Yellowstone and Big Horn Counties, bordered by Wyoming on the south and the northwestern boundary approximately 10 miles from Billings, MT. The Crow Tribe has more than 13,000 enrolled Tribal members and about 75% (9,750) reside on the reservation, where 85% speak Crow as their first language.

Currently, the main uses of land in the area are for agriculture and ranching. Coal and coal-bed methane deposits can be found on the Reservation but have not been developed.

With more than 2,100 BIA and Tribal road miles - the heavily traveled I-90 and US Highway 212 corridors that cross the Reservation - the safety of the Tribal transportation system is an important factor for visitors and residents. The average of MDT's Annual Average Daily Traffic (AADT) on I-90 is more than 7,000 and nearly 2,000 for US Highway 212 each year. With the Little Bighorn Battlefield National Monument located at the junction of US Highway 212 and I-90 and the widely attended Crow Fair, summer traffic volumes in the area are considerable.

Available data has indicated that injury and fatality crash rates on reservations are higher than the rest of the United States. Federal programs are available to help resolve traffic-related crashes and provide safer reservation transportation routes for Tribal members and the traveling public. The Federal Highway Administration (FHWA) created the Tribal Transportation Program Safety Funds (TTPSF) aimed at addressing safety issues and needs of Tribal governments for transportation and access on reservations. Each year, 2% of available Tribal Transportation Program (TTP) funds (\$450,000,000) are awarded for safety improvements through a competitive application program. The funds are awarded in four categories to complete improvements that prevent and reduce injuries and fatalities resulting from traffic related crashes. The four categories and their respective funding goals are as follows:

Strategy	Funding %
Safety Planning	40%
Engineering	30%
Enforcement/EMS	20%
Education	10%

FHWA has emphasized the development of a TSMP as a first step in implementing a comprehensive safety program. This is clearly seen in the funding emphasis on safety planning and the ranking criteria that requires any safety project application be linked to a transportation safety plan.

A Tribal TSMP is a community-based, multi-disciplinary approach to identify transportation safety issues and potential implementation strategies with the goal of improving transportation safety on Tribal Lands. FHWA describes them as:

“Tribal Transportation Safety Plans are a tool used to identify and address transportation risk factors that have a potential of leading to serious injury or death. Safety Plans also organize the efforts of a variety of entities to more effectively reduce risk and can cover multiple transportation modes (roads, maritime, trails, air travel, and others). Safety plans may lead to implementation of a project or program, renewed efforts in an existing program, or further study of a roadway section (using an engineering study or Road Safety Audit).

A Tribal Safety Plan should not be developed with a focus on any one funding source. Instead, a Tribal Safety Plan should demonstrate the safety concerns in a community and the strategies that will be explored to implement the plan. To the greatest extent possible, the concerns demonstrated by a safety plan should be selected based on incident history (data). Data allows funding entities to understand the needs and may even compel the funding of the community's needs. Safety plans can provide a forum for utilizing data sets that are not otherwise considered by funding agencies such as public testimony when formal crash data does not exist”.

The benefits of developing safety plans has been well-documented and include the opportunity to leverage resources, work toward a common goal, consider all road users and have reduced deaths and injuries in Tribal and other communities.

In 2008 the Crow Tribe developed a TSMP committed to “reducing the number of deaths and serious injuries and improving the overall safety of the transportation on the Crow Nation (2008 TSMP).” The effort focused on outlining the existing transportation safety programs and policies on the Reservation and to identify strategies, issues, procedures and projects that if implemented, could reduce fatal and injury crashes. The plan was developed by a group of Tribal, state and federal safety professionals, and other interested parties from the Crow Reservation community. The 2008 plan identified a number of existing programs, but highlighted the following:

- The Tribe is using a GIS database to plot crash locations on the reservation
- The Tribe has had an active DUI taskforce since 2001
- The BIA police have a Cisco crash records system
- The Tribe provides child seats and a mandatory 1 hour training session in restraint use for all new parents at the hospital prior to infant release
- The Tribe has held safety checkpoints in cooperation with state and local enforcement agencies

- The Tribe has completed local seat belt usage surveys

In addition to these ongoing activities the group also identified strategies that it was believed, if implemented, could assist in further reducing crashes. These included:

- Hire a SOAR Coordinator
- Develop a sample traffic code to present to council
- Develop a sample cross deputization agreement

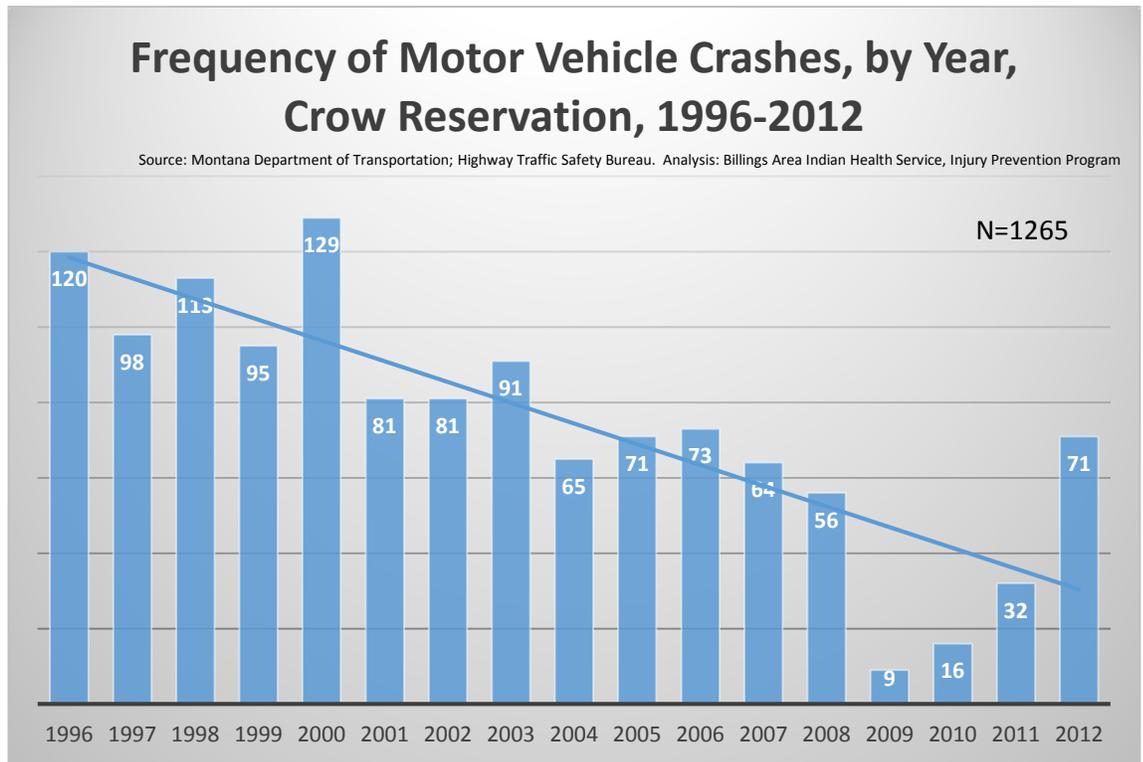
While the 2008 TSMP plan was a good start for the Crow Tribe and current data shows that injuries and fatalities have been dropping since implementation, the plan was not heavily data driven and is in need of an update to reflect present-day conditions. To assist with this update, the Crow TTP applied to and received funding from FHWA TTP Safety Funding.

## DATA ANALYSIS

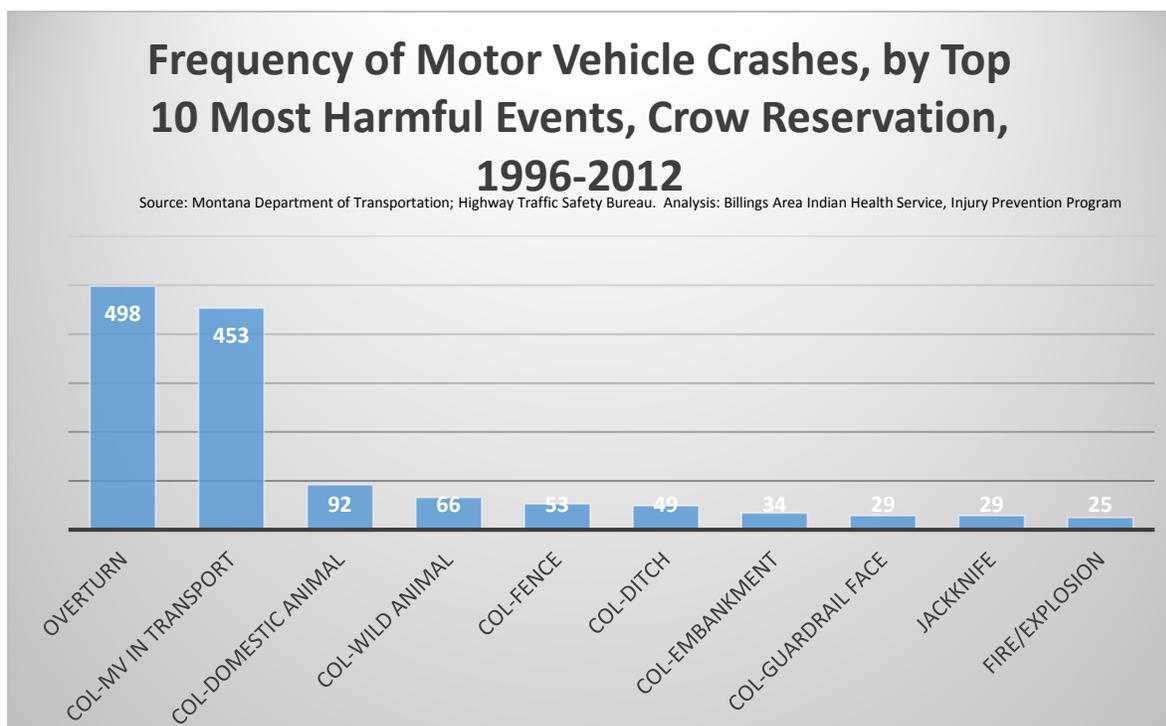
One important factor in development of a TSMP is the available crash data analyzed and utilized in the identification of issues and development of strategies. Data is also an important resource as Tribes apply for federal and state safety funding, as many if not all of these request data to support the grant application. Available crash data shown in this plan was provided by Indian Health Services (IHS) and was analyzed to reflect contributing factors to deaths and injuries on the Reservation. The data analysis was completed using available data from MDT. Unfortunately, the BIA currently does not share or report crashes to either MDT or the Crow Tribe, so a complete set of data is not available. While the crash cause trends are still valid, the data is largely based on crashes occurring on I-90 and US Highway 212, with few crashes from the local and BIA system included.

## Total Crashes

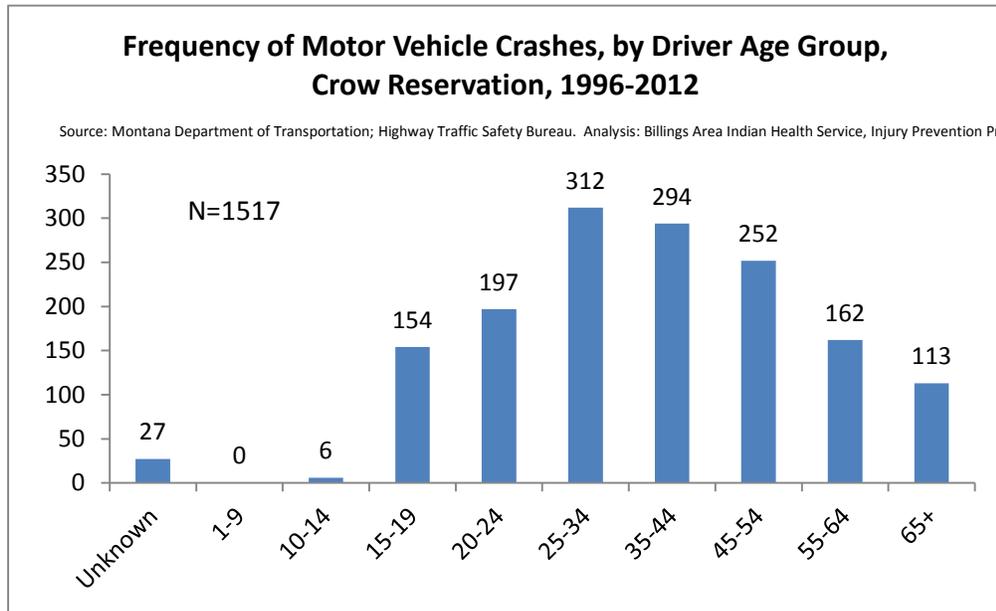
From 1996 to 2012 there were 1,265 reported crashes on the Crow Reservation according to IHS data. The chart shows that the overall trend is in a downward direction from 1996 to 2009; however, the trend has begun to increase since 2010.



The total crashes for the time period from 1996 to 2012 were also analyzed and separated into the 10 most common harmful causation events. Of these reoccurring events shown in the table, 72% occur in two categories, collisions with other moving vehicles and single vehicle overturning crashes. Domestic animals (92) and wild

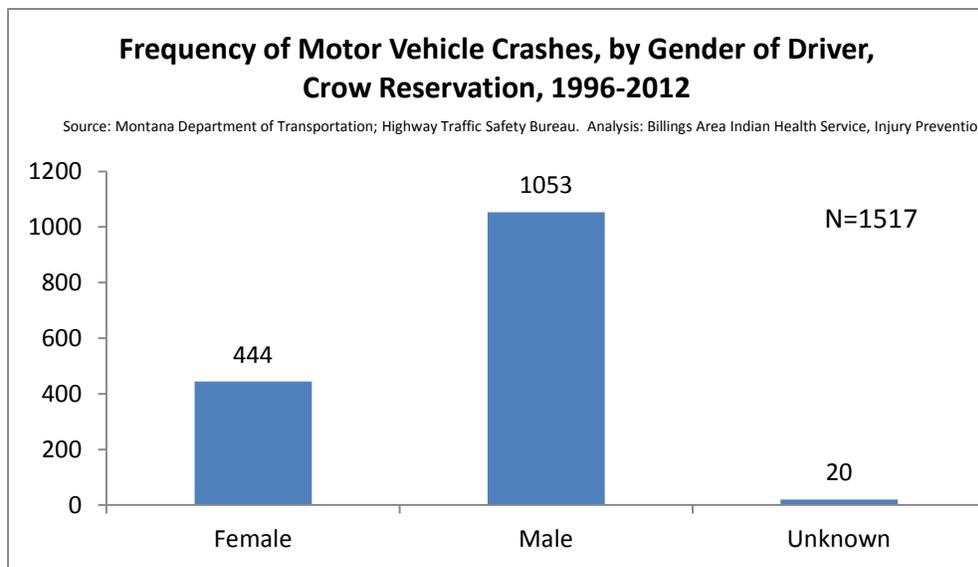


animals (66) accounted for 12% of the crash events on the Crow Reservation. The remaining 16% of crashes occur with roadside features including fence, ditch, embankment, guardrail face, jackknife and fire/explosion.

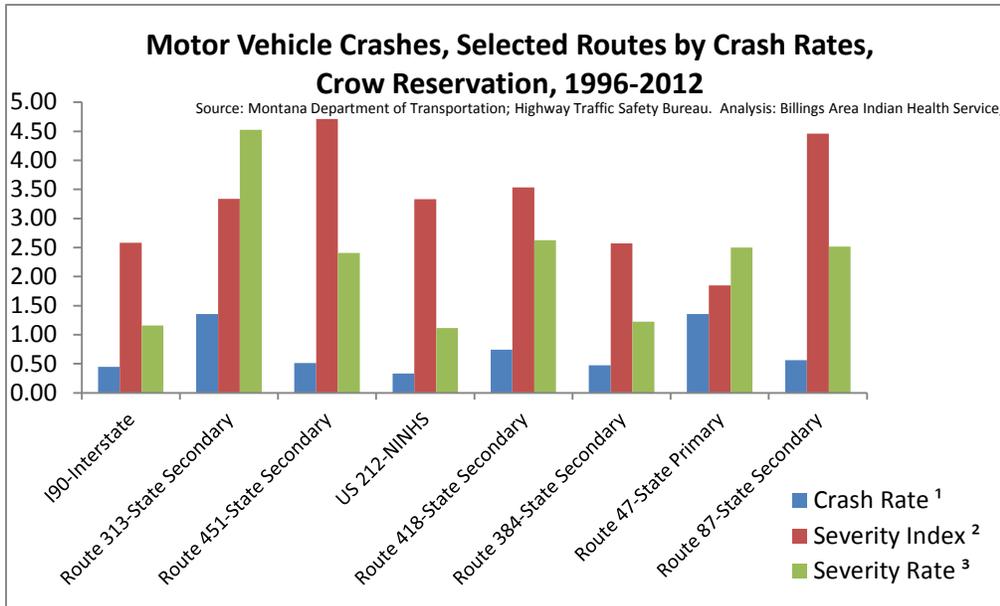


As has been seen in many Tribal and non-Tribal communities, drivers between the ages of 15 and 44 are involved in the majority of crashes. Of the crashes occurring on the Crow Reservation, the largest

proportion of these crashes are occurring in the 15-24 year old age group (shown in separate bars), followed closely behind by the 25-34 age group. While the 15-19 year old age group comes is slightly lower, the number of licensed drivers in that category would be significantly lower, resulting in a higher crash rate for this age group. Based on this data, education or training programs targeting younger drivers may help to reduce overall crashes.



While male drivers are consistently involved in higher number of crashes, on the Crow Reservation this disparity is shown to be at a nearly three to one rate.



An analysis of crashes by route showed that the majority of crashes were occurring on the state highway system. This is not unexpected as these routes have the highest traffic volumes and

the majority of the crash data that was analyzed was provided by the Montana Highway Patrol.

## Injury Crashes

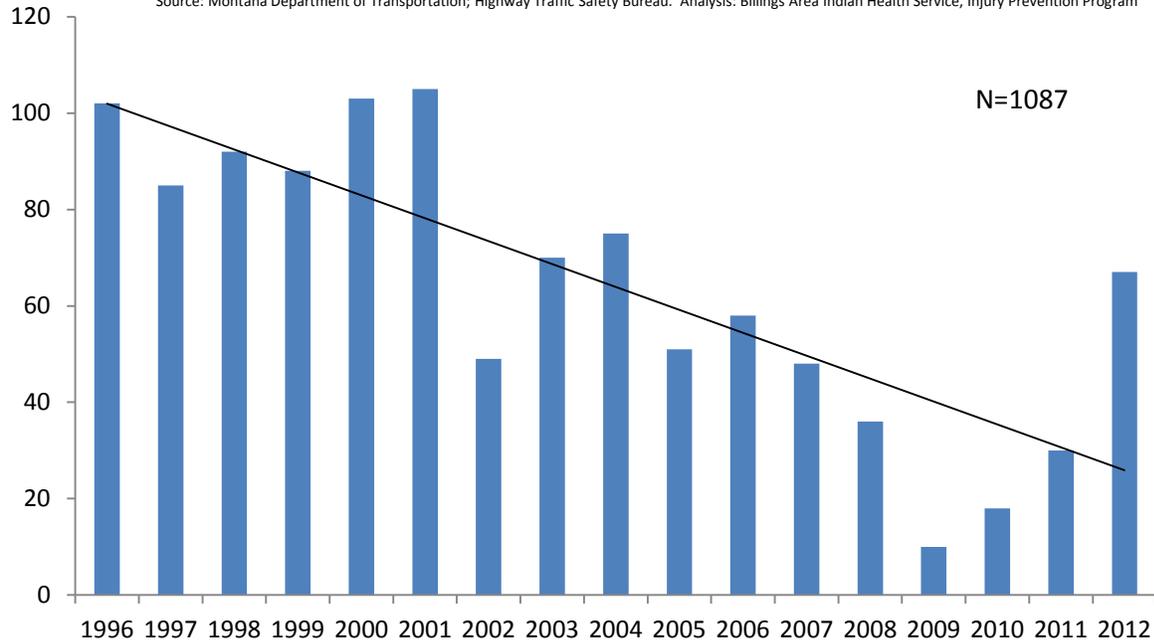
While overall injury crashes on the Crow Reservation have dropped significantly over the last 10 years, there have still been nearly 1,100 since 1996. This trend closely matches the trend for overall crashes and may be somewhat skewed due to the lack of full crash data from the Crow Police department. As is the case with most of the severe crashes in rural areas of Montana, the vast majority of these injury crashes are single-vehicle crashes that occur in summer when traffic volumes are higher or in the winter months when driving conditions may be poor. Single-vehicle crashes accounted for 493 out of the total 626 injuries and July, August and December were the months with the highest number of injuries.

The injury crashes that are occurring are overwhelming male drivers under 44 years of age. While the 15-19 and 20-24 year old age groups are not the highest shown in the data, the other ranges are in 10-year increments. If these are combined it would overwhelmingly be the highest category, indicating that younger drivers are over represented in injury crashes.

The vast majority of these injury crashes were overturning crashes, with speeding, careless driving, alcohol, inattentive driving and icy roads being the most common contributing circumstances. Following are graphs that visually represent this data:

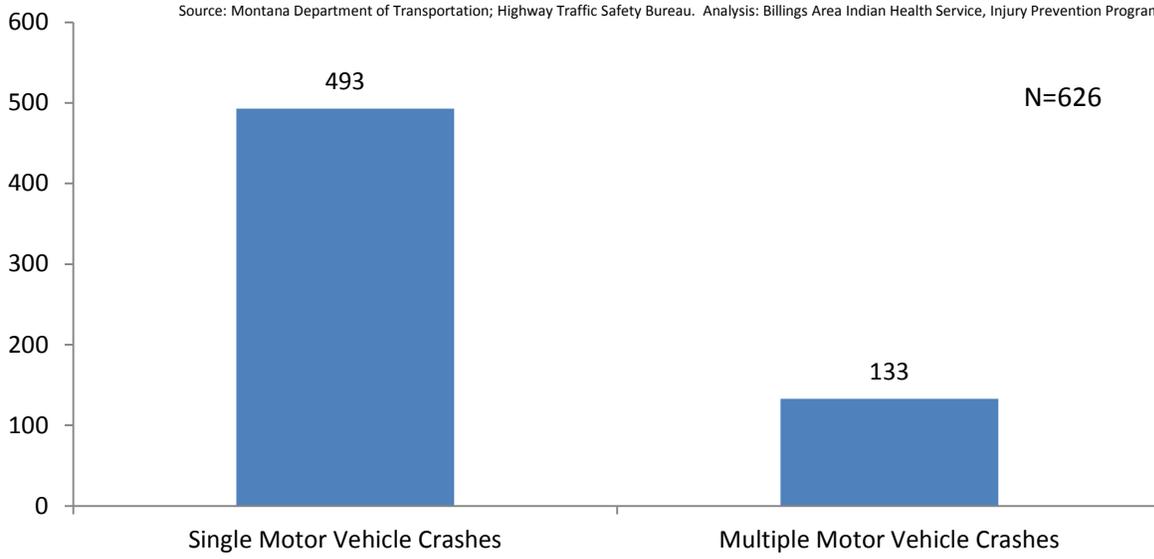
## Frequency of Occupant Injuries, by Year, Crow Reservation, 1996-2012

Source: Montana Department of Transportation; Highway Traffic Safety Bureau. Analysis: Billings Area Indian Health Service, Injury Prevention Program



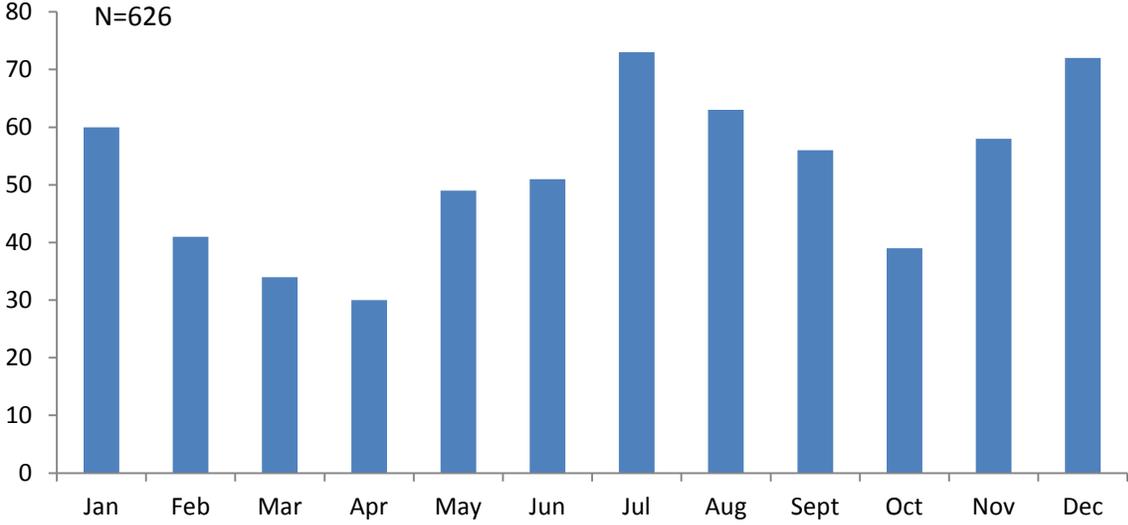
## Frequency of Injury-related Motor Vehicle Crashes, by Single or Multiple Vehicles, Crow Reservation, 1996-2012

Source: Montana Department of Transportation; Highway Traffic Safety Bureau. Analysis: Billings Area Indian Health Service, Injury Prevention Program



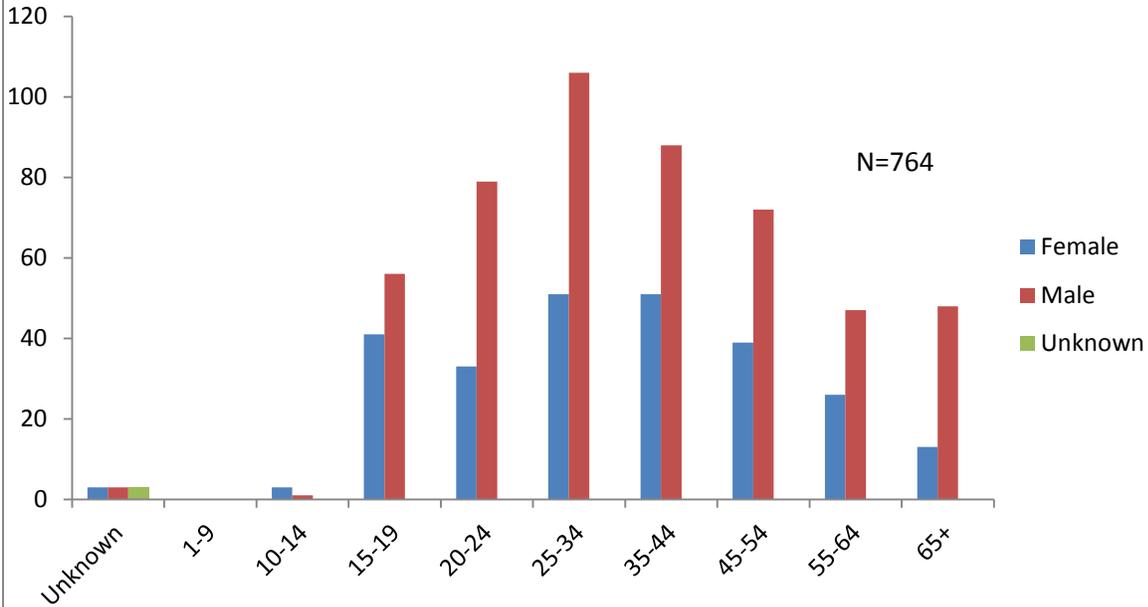
## Frequency of Injury-related Motor Vehicle Crashes, by Month, Crow Reservation, 1996-2012

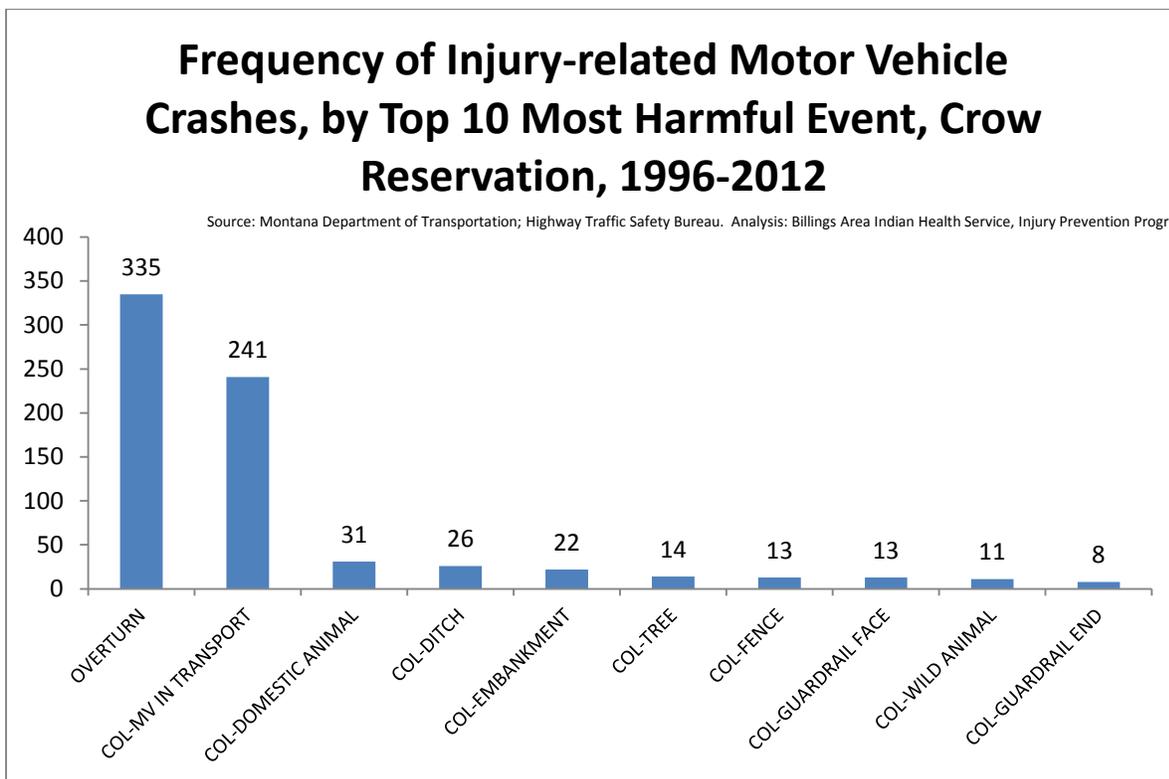
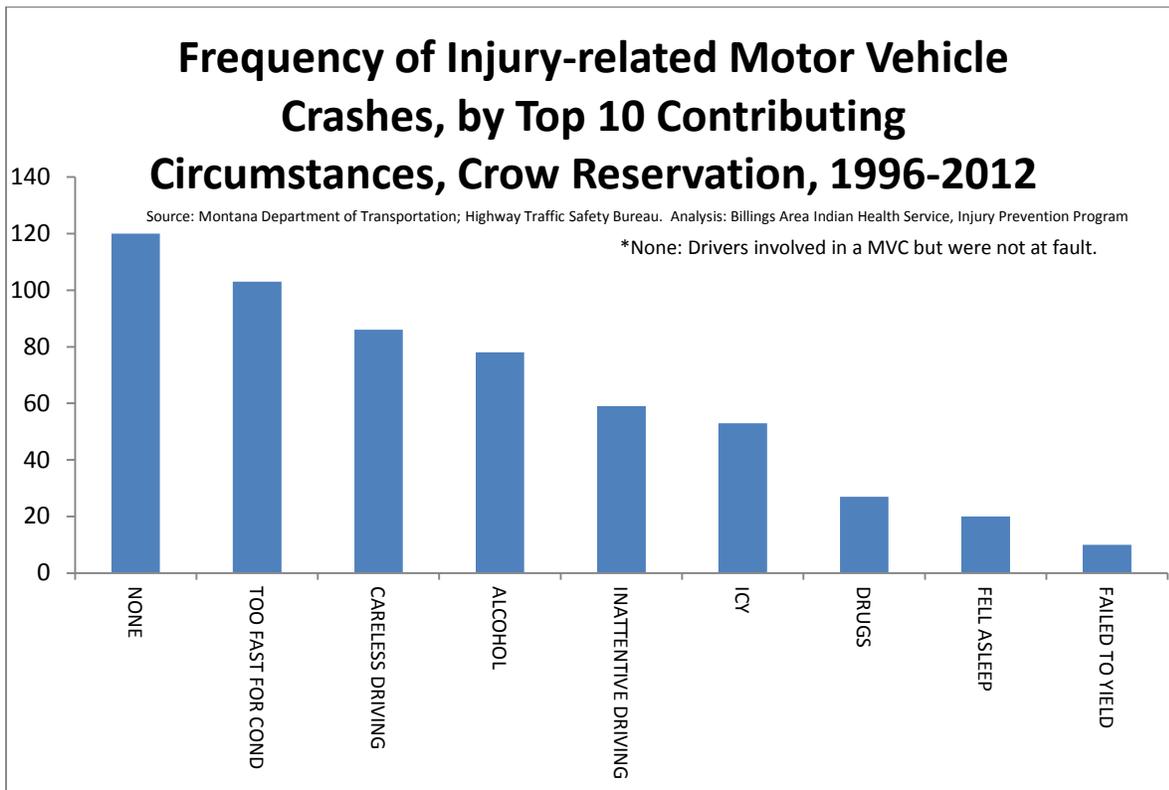
Source: Montana Department of Transportation; Highway Traffic Safety Bureau. Analysis: Billings Area Indian Health Service, Injury Prevention Program



## Frequency of Injury-related Motor Vehicle Crashes, by Driver Gender & Age Group, Crow Reservation, 1996-2012

Source: Montana Department of Transportation; Highway Traffic Safety Bureau. Analysis: Billings Area Indian Health Service, Injury Prevention Program



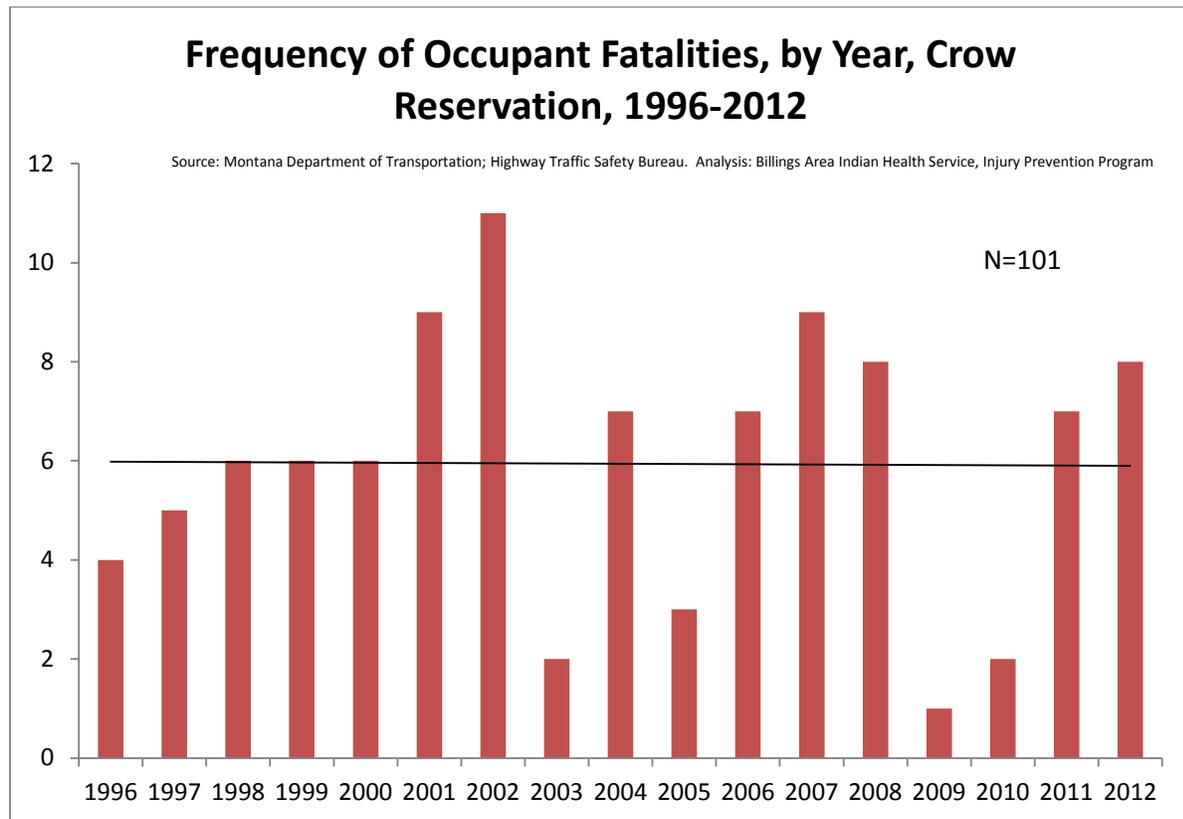


## FATAL CRASHES

While overall crashes and injuries have been declining, the overall trend for fatalities has been flat. While there is substantial variations from year to year, there has been no corresponding decline. These crashes have resulted in more than 100 deaths since 1996.

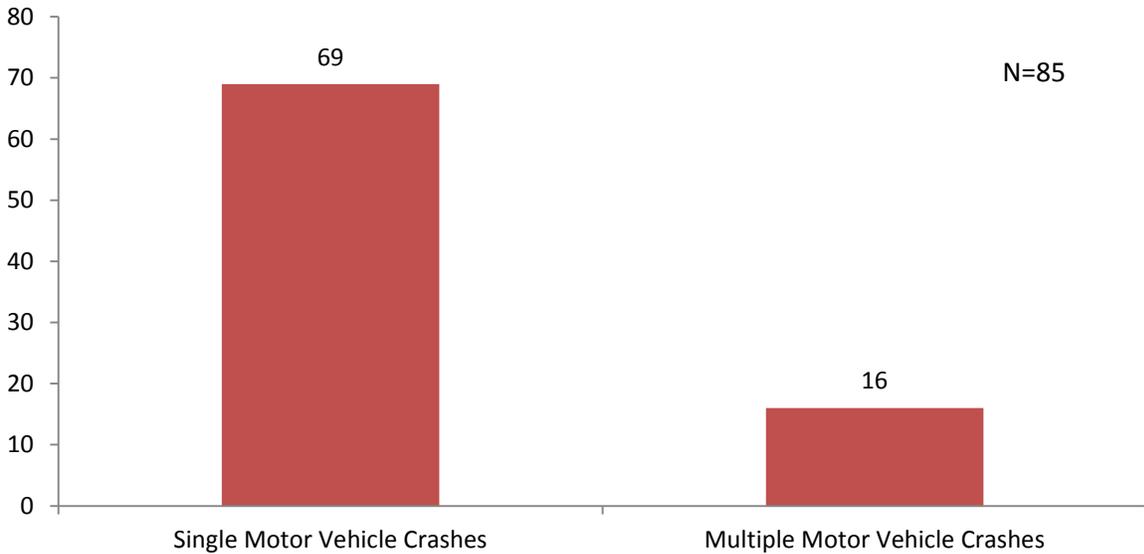
The deadly crashes are nearly all single-vehicle crashes, and pattern the overall crashes, in that, they occur in the summer months and late fall and winter. They also are predominantly male, and like injured younger drivers, are significantly over represented. In this case drivers between the ages of 15 and 24 account for nearly a quarter of all fatalities. One difference is that drivers ages 45-54 show a significant spike, this is most likely due to the influence of I-90.

For fatalities, overturning crashes are by far the most common cause, but animal crashes (4), fixed objects (13 overall) and pedestrians (2) were also present. Similar to injury crashes, the top contributing circumstances were alcohol, careless driving, speeding and inattentive driving; however, alcohol involvement moved up to the most frequent. Following are graphs that represent this data:



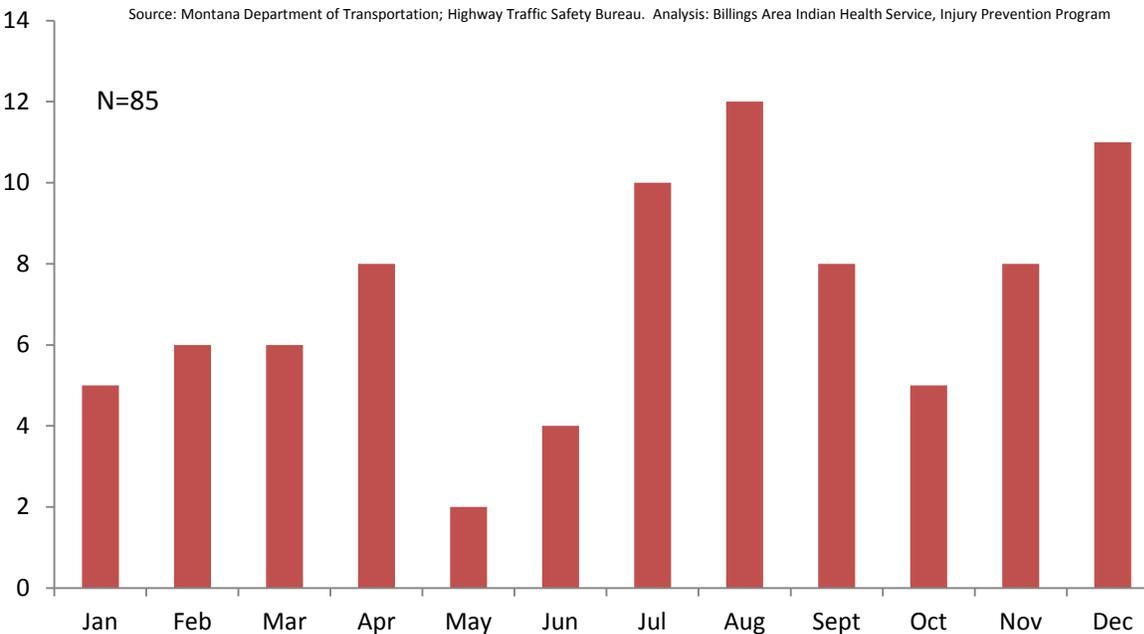
## Frequency of Fatality-related Motor Vehicle Crashes, by Single or Multiple Vehicles, Crow Reservation, 1996-2012

Source: Montana Department of Transportation; Highway Traffic Safety Bureau. Analysis: Billings Area Indian Health Service, Injury Prevention Program

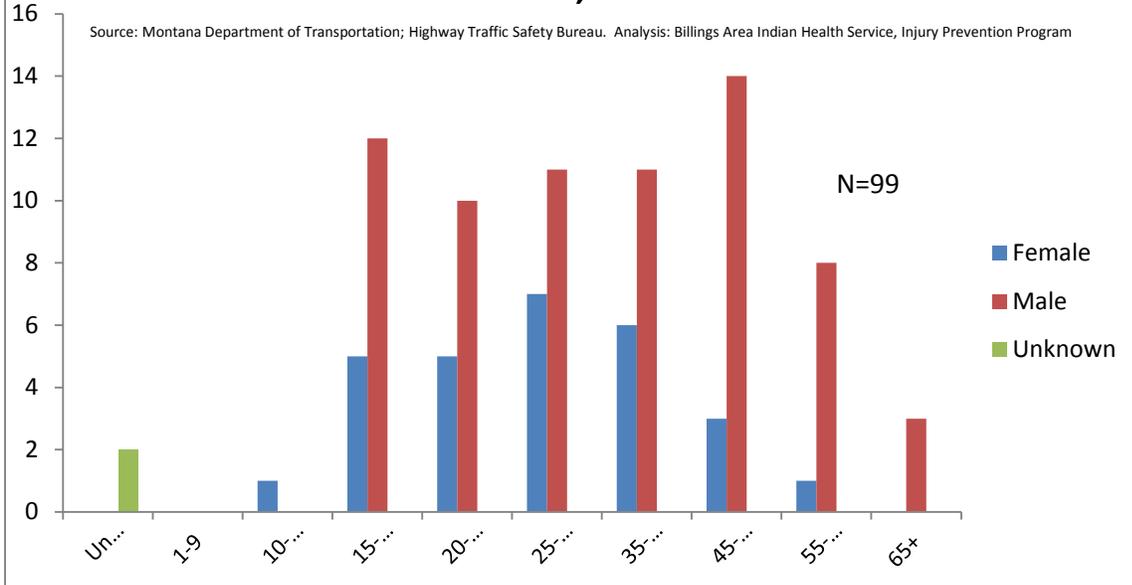


## Frequency of Fatality-related Motor Vehicle Crashes, by Month, Crow Reservation, 1996-2012

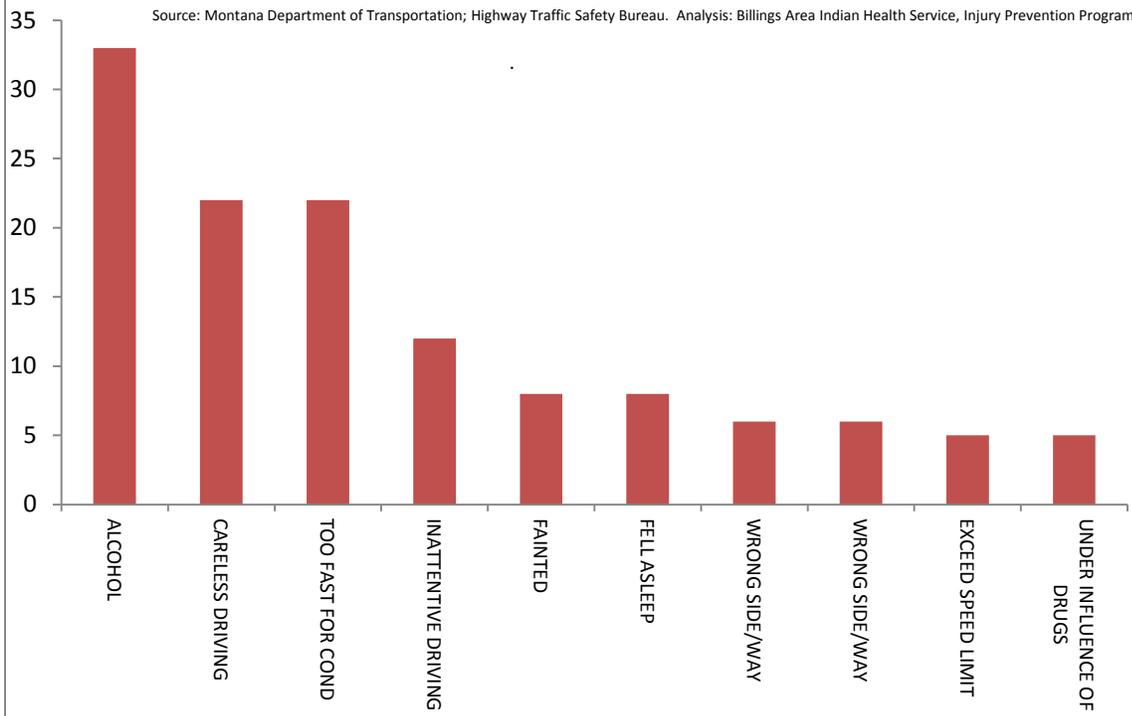
Source: Montana Department of Transportation; Highway Traffic Safety Bureau. Analysis: Billings Area Indian Health Service, Injury Prevention Program



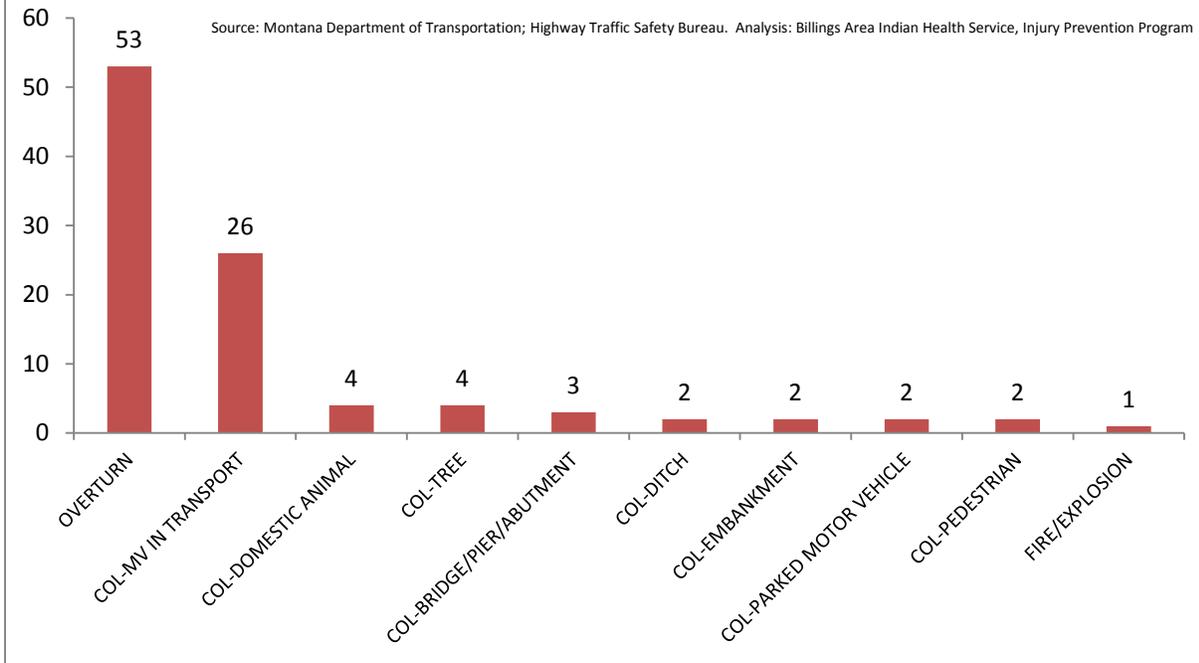
## Frequency of Fatality-related Motor Vehicle Crashes, by Driver Gender & Age Group, Crow Reservation, 1996-2012



## Frequency of Fatality-related Motor Vehicle Crashes, by Top 10 Contributing Circumstances, Crow Reservation, 1996-2012

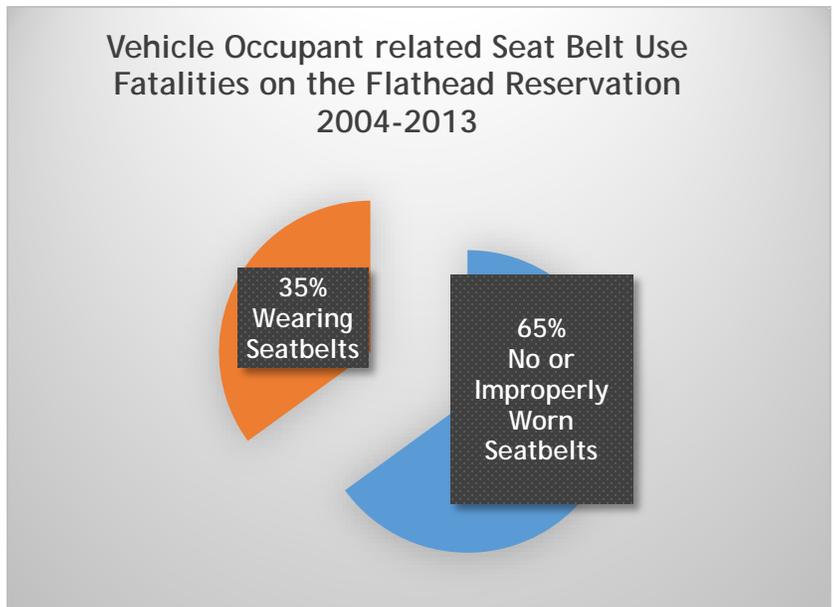


## Frequency of Fatality-related Motor Vehicle Crashes, by Top 10 Most Harmful Event, Crow Reservation, 1996-2012



### Seat Belt Data

While seat belt data specifically for the Crow Tribe is not available, MDT data in the past has shown that only 10% of Native American fatalities in Montana were using passenger restraints. More recent data from 2004 to 2013 on the Crow Reservation showed that while there has been some improvement, the level of seatbelt use in fatal crashes is still extremely low. Observation on the Crow Reservation by the SOAR Coordinator showed that seatbelt use in the local communities was even much lower with only about 1 in 10 people using restraints.



### Railroad Crash Data

Data was also obtained from the railroad for incidents that occurred on or near the Crow Reservation. Over the last 10 years there were 47 collisions, with 17 of these occurring in Lodgegrass. Information was not available to determine causes or contributing factors for these crashes, but does highlight the need for the gathering of additional information for improved rail crossings, education programs or other strategies to address these crashes.

BIG HORN COUNTY / CROW INDIAN RESERVATION RAILROAD RELATED CRASHES	
CITY	COLLISIONS
Benteen	4
Crow Agency	7
Dunmore	5
Hardin	8
Lodgegrass	17
Reno	2
Wyola	4
<b>Total Collisions</b>	<b>47</b>

## 2015 TRIBAL TRANSPORTATION SAFETY MANAGEMENT PLAN

This 2015 plan was developed using available data and the personal knowledge and expertise of the participants that attended the planning meeting. The group included city, county, state, federal and Tribal safety representatives from engineering, enforcement, education, emergency disaster services and the school systems.

The planning group reviewed the 2008 Plan and crash data that was available and utilized it as a basis to develop a list of issues that are currently affecting transportation safety on the reservation. The group then identified the existing programs that currently exist on the Reservation and identified additional strategies that need to be implemented to address these safety issues. The next three sections document these discussions and the outcomes.

### ISSUES CAUSING CRASHES ON THE CROW RESERVATION

The crash data that was analyzed clearly shows a number of transportation safety issues that are causing crashes, increasing crash severity or restricting complete data analysis. Many of which were identified in 2008 as well. The issues identified include:

- Single-vehicle crashes
- Younger drivers
  - 25-34 for all crashes
  - 15-19 year olds significantly high for fatal crashes
- Male drivers significantly over represented
- Speeding
- Overturning crashes
- Careless driving
- Distracted driving
- Icy roads (especially on I-90)
- Collisions with animals (wild and domestic)
- Alcohol involved crashes (especially fatal crashes)
- Railroad crashes

The group identified a number of other transportation safety issues based upon personal experience that are causing crashes, increasing crash severity or are otherwise creating transportation safety concerns in the local communities. These include:

- Aberdeen Hill
- Lack of timely road closures
- Seat belt use
- Lack of traffic code
- Poor signing and pavement markings
- Poor roadway conditions (especially Pryor Road)

- No shoulders on roadways
- Open range policy
- Intersection of BIA 45 and Sarpy Road
- Lack of Pedestrian facilities
- Need for snow fences

## EXISTING SAFETY PROGRAMS ON THE CROW RESERVATION

The Tribe has implemented or is working on a number of safety projects and programs to address transportation safety issues on the Reservation. The list is not all inclusive, but documents the programs that the group participating in the development of the safety plan were aware of.

- The SOAR program is established and a Program Coordinator is in place.
- The Tribe is plotting crash locations to determine hot spots for traffic crashes.
- The Tribe has an active DUI Task Force.
- Child seats are being provided to those that need them in the community.



- The Tribal Police are using safety checkpoints on the Reservation, particularly during high traffic times and critical community events.

- Seat belt surveys are being completed.
- Traffic safety presentations are being provided for youth in the school system.
- The IHS holds an annual Safety Days.
- The Tribe has an Emergency Response Committee.

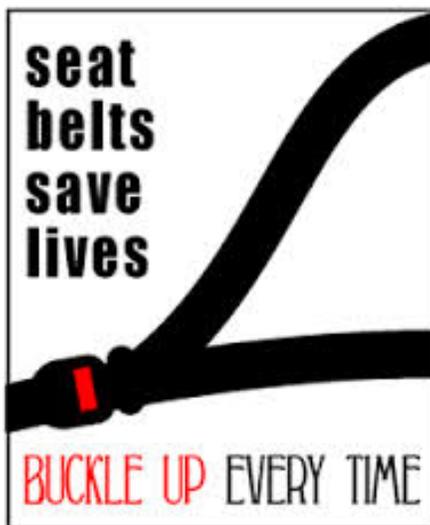
- Dynamic message boards are being used during the Crow Fair to aid in traffic movement.

## IMPLEMENTATION STRATEGIES

The main goal of the plan is to use a multi-disciplinary approach to identify safety strategies for implementation that can address the identified safety issues. The strategies are intended to be implemented over the next several years and when appropriate, possible safety funding sources have been identified. The strategies were developed as a comprehensive approach to safety, including engineering, enforcement, education and emergency management opportunities.

### Education Strategies

- Continue and Expand the Reservation-Wide Transportation Education Program



The Crow Tribe has a SOAR Coordinator, who works with law enforcement, schools and other interested parties on the Reservation to provide education on transportation safety, particularly to younger drivers on behavioral issues such as seat belt use, texting and driving, impaired driving and child restraint. With Alcohol, Careless Driving, Speeding and Inattentive driving being the top four contributing circumstances for fatal crashes, this program can be extremely important in reducing injuries and deaths.

This project would use and build on national safety campaign themes on impaired driving, seat belt use, texting and driving and other transportation safety issues, by using local leaders, or other easily recognizable individuals from the Tribal Community to promote these safety themes. Many safety campaigns across the country have shown a greater rate of success when they are made culturally relevant to the Tribal audience and utilize local talent to deliver the safety message. The SOAR Program has received funding for items in the past, but funding is not sufficient for larger items such as PSAs, Arrive Alive Programs, billboards using local artistry, banners, videos, Tribal safety posters and other safety education and promotional materials that would be used in education programs, during Pow Wows and at other community events.

**Strategy Champion:** Crow Tribal Transportation Program and Tribal SOAR Coordinator.

**Funding Opportunity:** TTP Safety Funding, BIA Indian Highway Safety Program (IHSP) Funding.

- **Establish a Youth Drivers Education Program**

During development of the Crow Tribal Safety Plan, there was discussion about driver education programs for younger drivers. These programs have changed over the years from one that was provided through the school systems to one where participants are required to pay for the classes and behind the wheel training. This has resulted in many youth in the community not taking classes due to the inability to pay for this service. The crash data that was analyzed for the Reservation shows a significant trend in younger drivers ages 15 to 34 for all crash types. This has been an issue with other Tribes in Montana as well where they have discussed requiring completion of a driver's education program as a graduation requirement. Coordination needs to occur with the Montana Office of Public Instruction and the Tribal Schools to see a program can be established to meet the needs of the Tribal community.

**Strategy Champion:** Tribal SOAR Coordinator, MDT SOAR Coordinator.

**Funding Opportunity:** MT OPI Funds, TTP Safety Funding and BIA IHSP Funding.

- **Utilize the Seat Belt Sled and other Safety Demonstration Devices**



Several Tribes have expressed an interest in acquiring and using a distracted driving simulator that could be used with youth in the Tribal communities. This system allows participants to use the simulator to experience what situations such as texting and driving or driving while impaired feel like from a driver's perspective. Sessions could be set up or the equipment could be purchased and used jointly by Tribes across Montana at community events and school activities. Groups such as Unite at: <http://arrivealivetour.com/unite/> have the necessary equipment and expertise. Other devices like the seat belt sled and rollover simulators are available from Montana Highway Patrol and other enforcement agencies. These could be used at the Tribal Safety Days, during the Pow Wow or during a separate event at the schools.

**Strategy Champion:** Crow Tribal Transportation Program and Tribal SOAR Coordinator.

**Funding Opportunity:** TTP Safety Funding, BIA IHSP Funding.

## Enforcement

- **Obtain and Upgrade Communications Equipment**

One key aspect to good, coordinated emergency response is having the ability for good communications



among responders. While police vehicles have radios and the BIA has recently upgraded the base station, other Tribal programs such as Transportation and Disaster and Emergency Services do not have communications equipment that allow them to respond accordingly to crashes, road closures or other events. Additionally, with the rural nature and inaccessible areas there is a significant need for all agencies to have hand-held communications equipment. The BIA is upgrading the base station at the new law enforcement building; however, proper protection for the location was not included. This site, while fenced is immediately adjacent to the roadway and needs positive separation to make sure that communications are not interrupted either intentionally or accidentally.

**Strategy Champion:** Crow Law Enforcement and Crow Tribal Transportation Program.

**Funding Opportunity:** TTP Safety Funding or BIA IHSP Funding.

- **Develop Road Closure Procedures with MDT and Montana Highway Patrol**

During adverse weather conditions it is common for I-90 to become impassible south of Crow Agency for travelers heading south. Currently there has been little coordination and at times, the roadway has not been closed timely, resulting in through traffic and Tribal members being stranded in the rural location. Additionally, when the road is closed, there is no advanced warning provided to allow drivers to exit at Billings, MT. This results in significant traffic and heavy truck traffic stacking up in both Hardin and Crow Agency. Neither of these communities have sufficient services to provide for this influx of travelers. The Crow Tribe would like to work with state authorities to develop a plan so that more timely and coordinated closures of the road can occur. This plan should also identify strategic points where notifications can be placed to allow drivers to make appropriate route and stopping point decisions.

**Strategy Champion:** Crow Law Enforcement, Crow Tribal Transportation Program, MDT and Montana Highway Patrol.

**Funding Opportunity:** TTP Safety Funding or MDT Safety Funds

- **Establish DUI Funded Youth Education Program**

With the high frequency of alcohol involved crashes and DUI arrests, there appears to be an opportunity to use the enforcement and Tribal courts to assist with youth education. A portion of the fine, or an increase in the fines for DUI could be set aside for outreach and education to reduce DUIs and traffic fatalities. The funds could be used by the Tribal SOAR Program or the DUI Task Force to enhance and expand existing programs.

**Strategy Champion:** Crow Law Enforcement, Crow Tribal Courts and DUI Task Force.

**Funding Opportunity:** TTP Safety Funding and BIA IHSP Funding.

## EMS

- **Provide Reservation-Wide Street Signing and House Numbering to Enhance 911 Response**

Currently the Tribe does not have an enhanced 911 system, which means that when a call is received by a 911 operator, location information is unavailable within the system. This requires the operator to get more detailed location information prior to being able to dispatch an emergency vehicle. This is also further complicated in that many roads are not signed, houses do not display a number and may be known by a local name or nickname that is not easily identifiable by either the dispatcher or responder. To remedy this situation, a reservation-wide street signing and house numbering project should be initiated. This could then be updated with the 911 system within the reservation to include location information for quicker response times.

**Strategy Champion:** Crow TTP, Crow Law Enforcement and EMS.

**Funding Opportunity:** BIA IHSP, TTP Safety Funds.

- **Develop and MOA for Fire Response**

There currently are multiple volunteer fire departments within communities on the Crow Reservation and at times it is unclear as to who are the first responders or service areas. To clarify service areas, first responders, protocols to request assistance and other procedures for emergency and fire response, a MOA should be developed amongst the key departments.

**Strategy Champion:** Crow Law Enforcement, Volunteer Fire Departments and DES Coordinator.

**Funding Opportunity:** None Required.

## Engineering Strategies

- **Develop a Reservation-Wide Signing and Marking Project**

There are many roadways on the Crow Reservation that do not currently have adequate highway signing or pavement markings installed. The absence or deteriorated nature of these highway signs and markings can significantly impact transportation safety. With the predominant crash



for injuries and fatalities being a single vehicle running off the road and then overturning, the addition of improved signing and markings could help to reduce these types of crashes. Installation of signing and markings has long been identified by the FHWA as proven low-cost safety improvements. Additionally, the road safety audits (RSA) performed on the Crow Reservation in the past have identified the improvement and installation of signing and markings for implementation. A project should be developed to design and install these features in compliance with the Manual on Uniform Traffic Control Devices (MUTCD).

**Strategy Champion:** Crow Tribal Transportation Program.

**Funding Opportunity:** TTP Funding, TTP Safety Funding.



- **Establish a Highway Fencing Program**

The data for the Crow Reservation shows that crashes with both domestic animals and wild animals rank in the top five for total crashes and domestic animal crashes are in the top three of first harmful events for injuries. These crashes show the need to install, repair and improve fencing along

roadways on the Reservation. Since many of these roadways are state routes, any fencing program would need to be coordinated with MDT. On other

Reservation programs such as these have been coordinated with Tribal Ordinances that empower Tribal Programs with the ability to gather and hold livestock that is running loose on highway rights-of-way. For a successful program, it is recommended that similar coordinated efforts be developed.

**Strategy Champion:** Crow Tribal Council, Crow TTP and MDT.

**Funding Opportunity:** TTP Funding, TTP Safety Funding and MDT Funding.

- **Perform Road Safety Audits on BIA, Tribal and County Roadways**

RSAs have been an important tool for many Tribes and provide an opportunity to bring traffic and safety expertise to help in assessing the safety concerns of routes where there are high numbers of crashes or where they have specific concerns. The goal of these RSAs is to identify safety issues and then develop transportation safety improvements that may include signing, lighting, striping, pathways, intersection improvement and other activities to address them. In the past, the Crow Tribe has been a leader in the region by being a pilot sight that performed RSAs for other Tribes in the region. To continue and to build on these safety efforts and the use of RSAs, the Tribe will pursue funding to accomplish similar efforts on the BIA, Tribal and County roadways within the Crow Reservation.

**Strategy Champion:** Crow Tribal Transportation Program.

**Funding Opportunity:** TTP Safety Funding.

- **Perform Railroad Safety Audits at BIA, Tribal and Local Road Crossings**



RSAs have been an important tool for many Tribes and provide an opportunity to bring traffic and safety expertise to help in assessing the safety concerns of routes where there are high numbers of crashes or where they

have specific concerns. The goal of these RSAs is to identify safety issues and then develop transportation safety improvements. With the number of crashes and near misses that are occurring at rail crossings, the Crow Tribe would like

to use this approach to assess safety improvements for the rail line. This effort would be coordinated with the county and the railroad to make sure that recommendations are implementable.

**Strategy Champion:** Crow Tribal Transportation Program.

**Funding Opportunity:** TTP Safety Funding.

- **Develop Multi-Use Separated Pathways and Sidewalks**



There are locations within the Crow Nation where there are pedestrian/bike traffic and the Tribe has identified a need for separated pathways or sidewalks. These included the Crow Agency Head Start, Pathway Access to the Pow Wow Grounds, Pedestrian Rail Crossings in Crow Agency, I-90 Pedestrian Structure and the BIA 1/Xavier Road Pathway.

The MDT crash data that was analyzed shows that two pedestrians have been killed on the Crow Reservation. These deaths and the large numbers of pedestrians that walk in the community make multi-use pathways to separate pedestrians from vehicle traffic a significant need. The need for these pathways has been present for some time but is especially evident during large gatherings such as the Crow Fair.



Lighting should be considered along urban or other pathways as appropriate to increase pedestrian visibility, provide for traffic calming and increase security. Solar powered and/or LED lighting could be used to reduce the cost for providing power and the need for continual power usage. An example of a solar powered lighting system is shown and several companies produce such systems.

A location has been identified where separated pathways would be beneficial to creating safer pedestrian and bicycling opportunities.

- **Crow Agency Head Start**

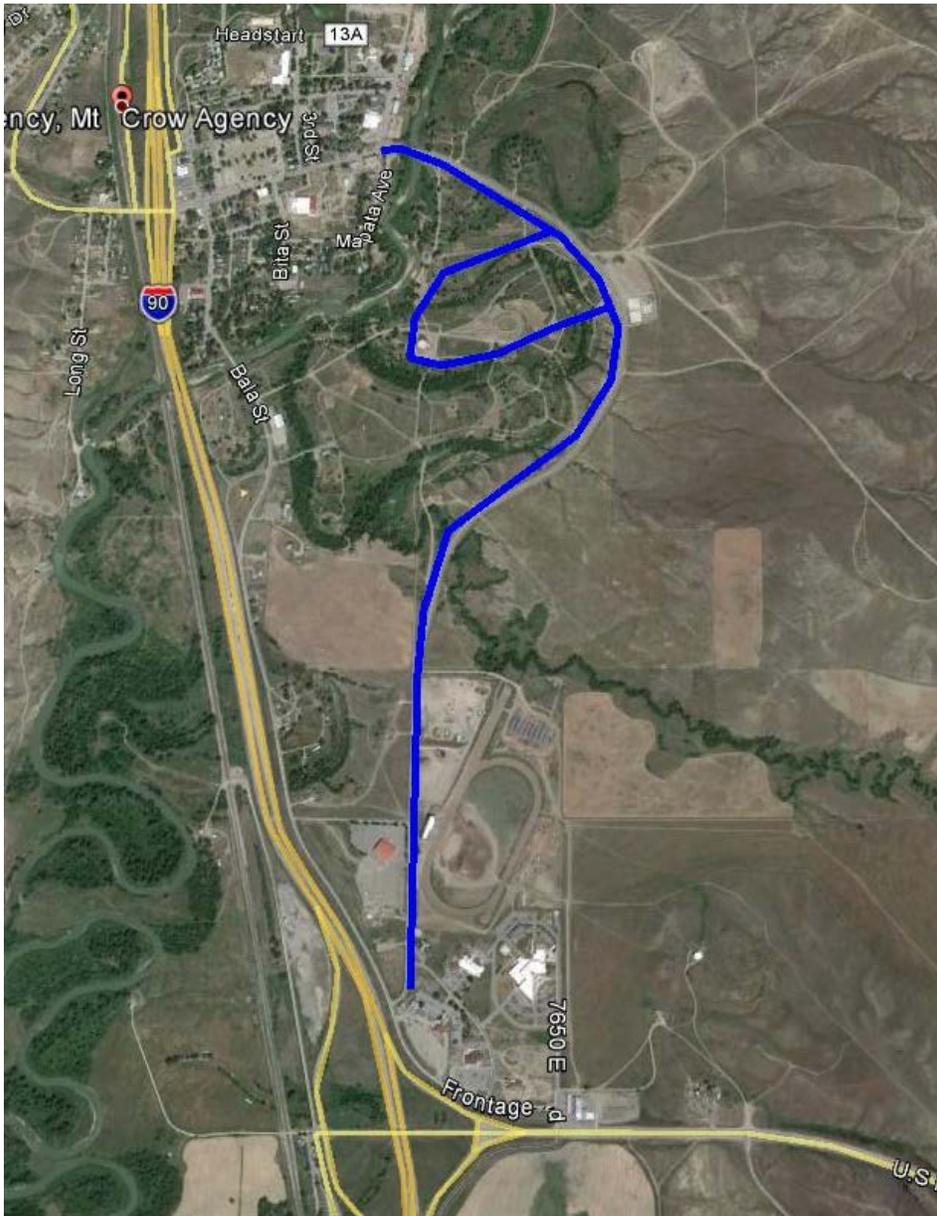
This sidewalk in Crow Agency, MT would start at the frontage road along I-90 and run east along Butchetchche Avenue. The Crow Elementary School is to the south of the street and the Head Start Program is on the north side. The path would then continue to the south along highway 13A to the intersection of Weaver Drive. This would allow for a connection from the Tribal housing to the school, head start and on to existing sidewalks in town. The connected sidewalk would be five feet wide, approximately .5 miles long and cost an estimated \$325,000, including design and construction.



**Strategy Champion:** Crow Tribal Transportation Program.

**Funding Opportunity:** TTP Safety Funding, TTP Funding or MDT Transportation Alternatives Funding.

- Pow Wow Grounds Pathway



This pathway would start at the east end of Makawasha Avenue in Crow Agency and run to the south along the Pow Wow Grounds and the fair grounds that are used during the Crow Fair. The pathway would also include a loop connection within the Pow Wow grounds and a connection to services at the I-90, US Highway 212 Junction. The pathway would be 10 feet wide, approximately 2.5 miles long and cost an

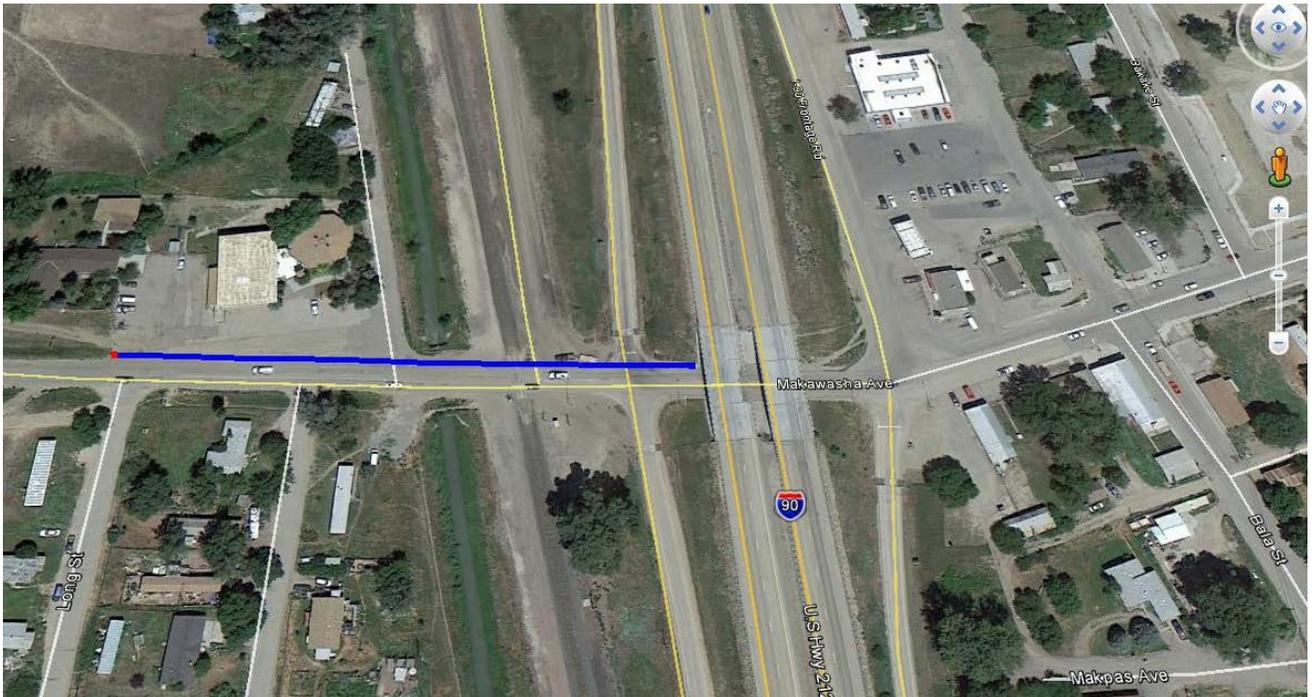
estimated \$890,000, including design and construction.

Strategy Champion: Crow Tribal Transportation Program.

Funding Opportunity: TTP Safety Funding, TTP Funding or MDT Transportation Alternatives Funding.

- **Crow Agency Pedestrian Railroad Crossings**

This pathway within Crow Agency would provide for a pedestrian connection from the tribal housing that is west of the interstate and Burlington Northern Rail line to Makawasha Avenue in downtown Crow Agency. Currently pedestrians have to use the narrow roadway to cross the rail, tracks and under the interstate structures or use the ditch area and cross the rails and ties. This pathway would be 8 to 10 feet wide and approximately .2 miles long. The estimated cost, including development of the rail crossing is \$85,000, including design and construction.



**Strategy Champion:** Crow Tribal Transportation Program.

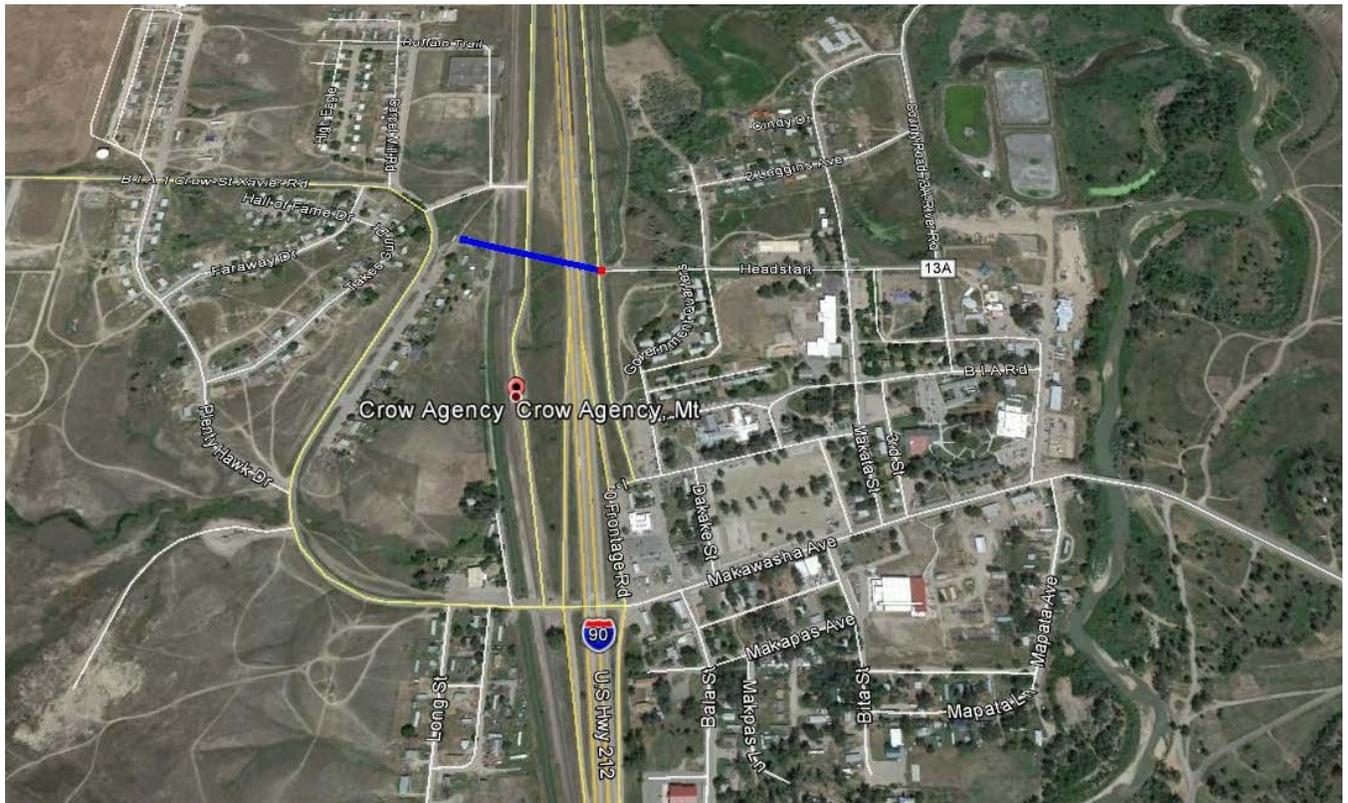
**Funding Opportunity:** TTP Safety Funding, TTP Funding or MDT Transportation Alternatives Funding.

- I-90 Pedestrian Structure

The only crossing of I-90 for bicyclists and pedestrians is at the Crow Agency Interchange, which itself does not include any sidewalk or other facilities west of the I-90 ramps. The large Tribal housing developments and Tribal facilities located to the north of this on both sides of I-90, have resulted in pedestrians crossing the interstate at grade at unauthorized locations.



There is a need for a grade separated structure to meet this need and provide safe crossing of the interstate. A crossing similar to the one pictured that exists over US 93 on the Flathead Reservation should be considered. Based on the cost of this structure in western Montana, this grade separation would cost approximately \$1,750,000.



Strategy Champion: Crow Tribal Transportation Program.

Funding Opportunity: TTP Safety Funding, TTP Funding or MDT Transportation Alternatives Funding.

- **BIA 1/Xavier Road Pathway**

This pathway located west of Crow Agency, MT would start at the end of the planned rail crossing pedestrian pathway and then run along BIA Route 1 to the entrance to the Tribal housing to the north. The pathway would then connect back to BIA Route 1 by running along Plenty Hawk Drive. The path would provide for safe pedestrian and bike access from the multiple Tribal housing subdivisions to facilities and businesses in Crow Agency. The initial segment of this pathway shown in red in the figure below has been approved for Transportation Alternatives Funding from MDT, so funding is only needed for the remaining links. The pathway would be 1.25 miles long and cost an estimated \$650,000, including lighting, design and construction.

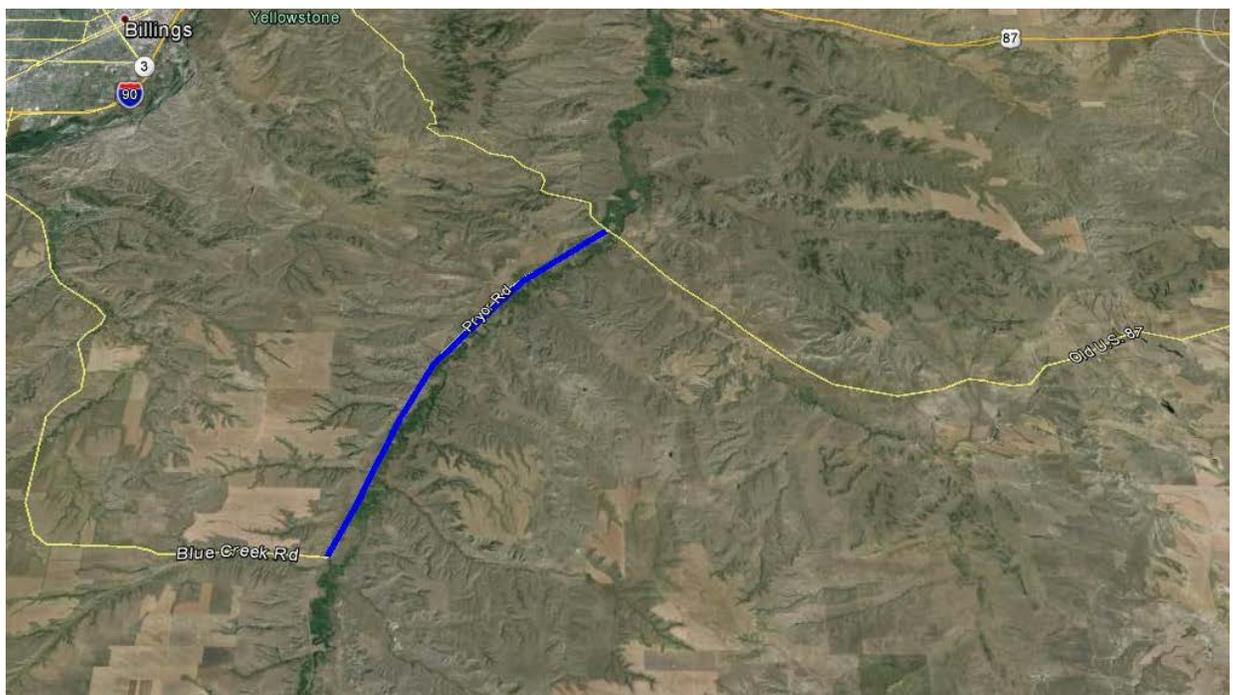
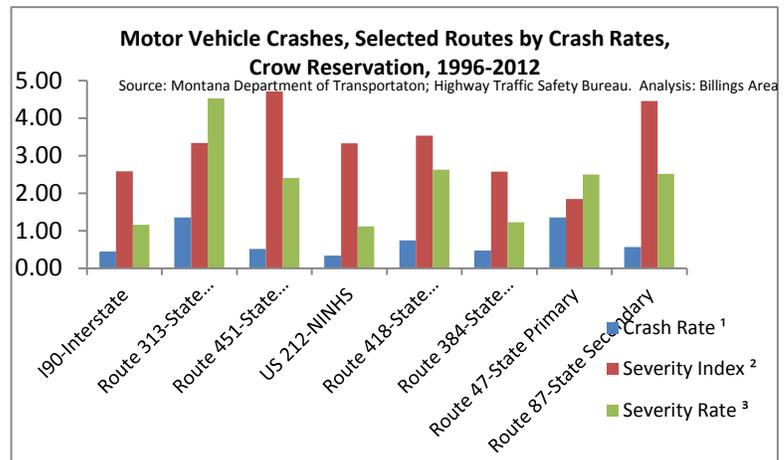


**Strategy Champion:** Crow Tribal Transportation Program.

**Funding Opportunity:** TTP Safety Funding, TTP Funding or MDT Transportation Alternatives Funding.

- **Implement Safety Countermeasures on Pryor Road Route 418**

Route 418 runs from the Old Highway 87 to Pryor. This is a higher traveled roadway as it connects the western portion of the reservation to the services in Billings. As was seen in the crash data analysis this roadway has a high number of crashes and as the table shows a significantly high severity rate. In the past, a road safety audit was performed on the roadway and recommendations for improvements were made. The Crow Tribe should utilize this RSA and apply to the TTP Program or MDT for safety funding to implement the recommendations.



**Strategy Champion:** Crow Tribal Transportation Program.

**Funding Opportunity:** TTP Safety Funding, MDT Safety Funds or TTP Funding.

## Safety Planning and Other Strategies

- Collect and Share Crash Data

As was discussed in the data section of this plan, the statistical data that is presented relies almost solely upon crash data from the State of Montana and includes very minimal BIA crash data. One of the main reasons for this is that the BIA and Tribal Law Enforcement currently do not have an electronic records system in place that is capable of sharing all or partial data. There are a number of crash records systems available, and the Montana Highway Patrol has recently implemented a new system that includes a web-based interface for city, county and Tribal governments. Many Tribes have started using electronic crash record systems and the most successful implementations have been where the program and form used are supported by the state DOT and they are able to provide training and support. The Crow Tribe and BIA Law Enforcement should work with the Montana Highway Patrol to review the system and hardware and software requirements for Tribal implementation.

**Strategy Champions:** Crow Law Enforcement, SOAR Coordinator and Montana Highway Patrol.

**Funding Opportunities:** The Montana Highway Patrol has indicated there is no cost for use of the system and training, if hardware or other costs are identified, TTP Safety Funding or BIA IHSP Funds should be applied for.

# CROW TRIBE

## 2015 TRIBAL TRANSPORTATION SAFETY PLAN

### ATTACHMENT A MEETING AGENDAS



**ATTACHMENT A**  
**CROW TRIBAL TRANSPORTATION SAFETY PLAN**  
**APRIL 27, 2015**  
**AGENDA**

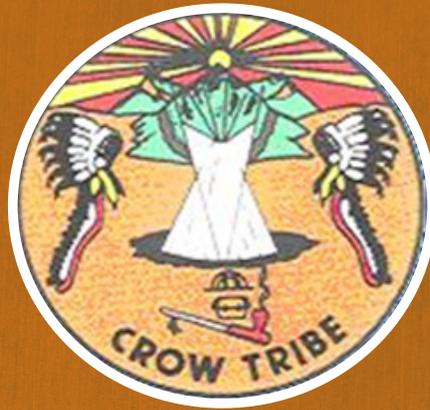
- 10:00 a.m. Welcome and Introductions
- 10:15 a.m. Background and Overview
- Discussion of Tribal Safety Plans, including need for
- Review of 2008 Crow Safety Plan
- Presentation of Crash and Safety Data
- Questions and Discussion of Data
- 11:00 a.m. Crow Tribe existing safety approaches (this is any practice the Tribe is utilizing to address transportation safety i.e. education to public, crash reporting/processes, EMS or engineering projects)
- 11:30 a.m. Development of Activities for updated Crow Tribal Transportation Safety Plan:
- Identification/Discussion of Safety issues and concerns
- Safety approaches to include
- Safety approaches to develop
- Integration with other safety plans
- 12:00 Lunch
- 1:00 p.m. Finalize Development of Safety Activities to include in Plan
- Sort by 4E's
- Identification of Implementation Steps
- Identification of Champions for Specific Elements
- Identification of Potential Funding Sources
- 2:30 p.m. Questions/Discussion of Process or other Items
- 3:00 p.m. Wrap up and/or Site Visit to any Locations

# CROW TRIBE

## 2015 TRIBAL TRANSPORTATION SAFETY PLAN

### ATTACHMENT B

### CRASH MAPS



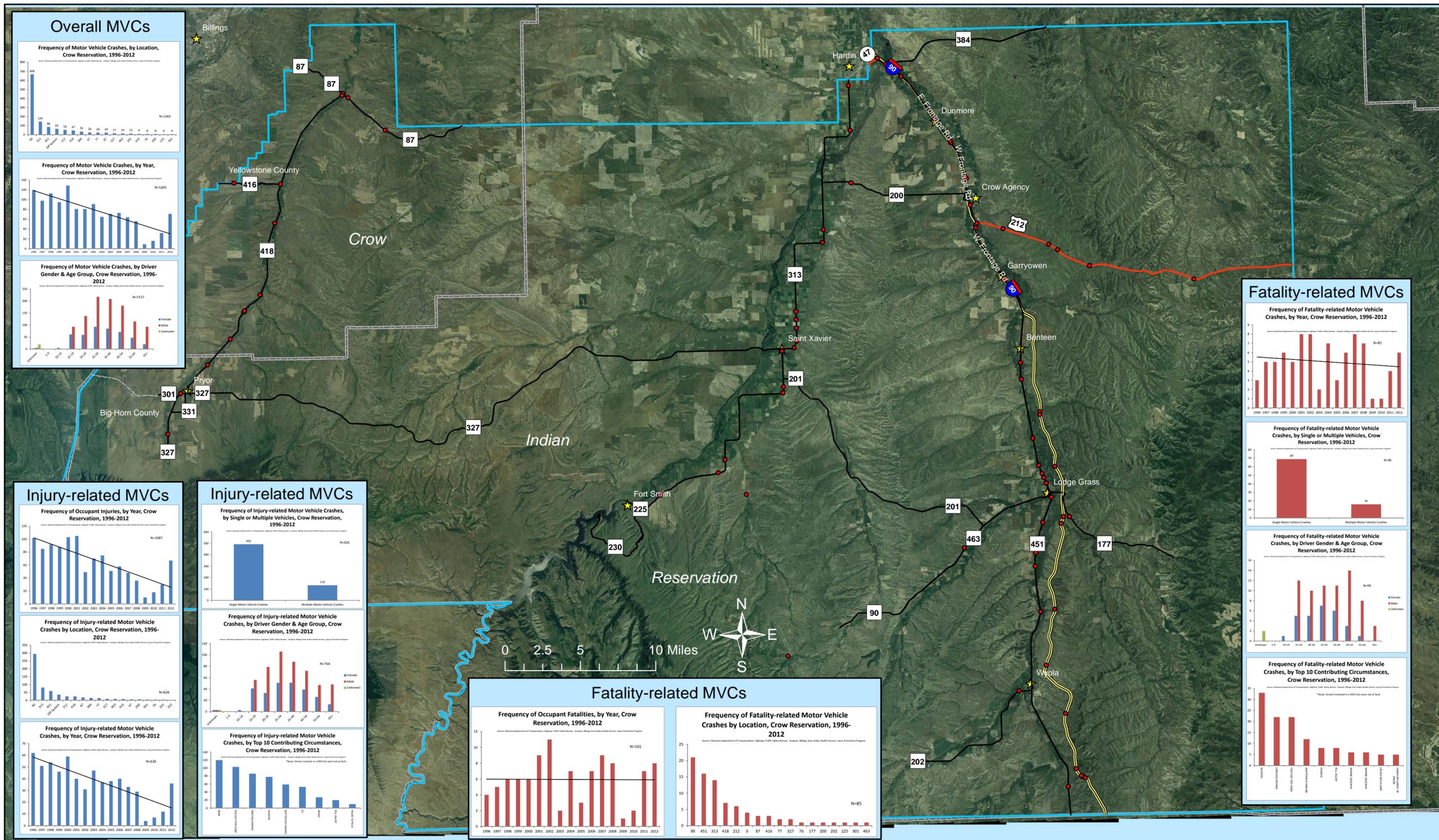


# Crow Tribe Motor Vehicle Crash Site Identification Project

## Motor Vehicle Crash-related Fatalities, 1996-2012



**IHHS Injury Prevention**  
Advocacy, Outreach and Results



### Legend

- ★ Towns
- State Highway
- Reservation Boundary
- U.S. Highway
- County Boundary
- Secondary Route
- Interstate
- Unpaved Road
- Fatality-related MVC

The Crow Tribe Motor Vehicle Crash Site Identification Project map is comprised of severe motor vehicle crashes (MVC) resulting in injury, death, or property damage. Data was collected from the Montana Department of Transportation's Highway Traffic Safety Bureau for years 1996-2012.

The overall goal of the project is to identify MVC cluster sites, trends, and to prevent MVC injuries and fatalities for those transporting within the boundaries of the Crow reservation.

Map created by Darcy Merchant, MPH, REHS, Environmental Health Specialist, Billings Area Indian Health Service, 2014.



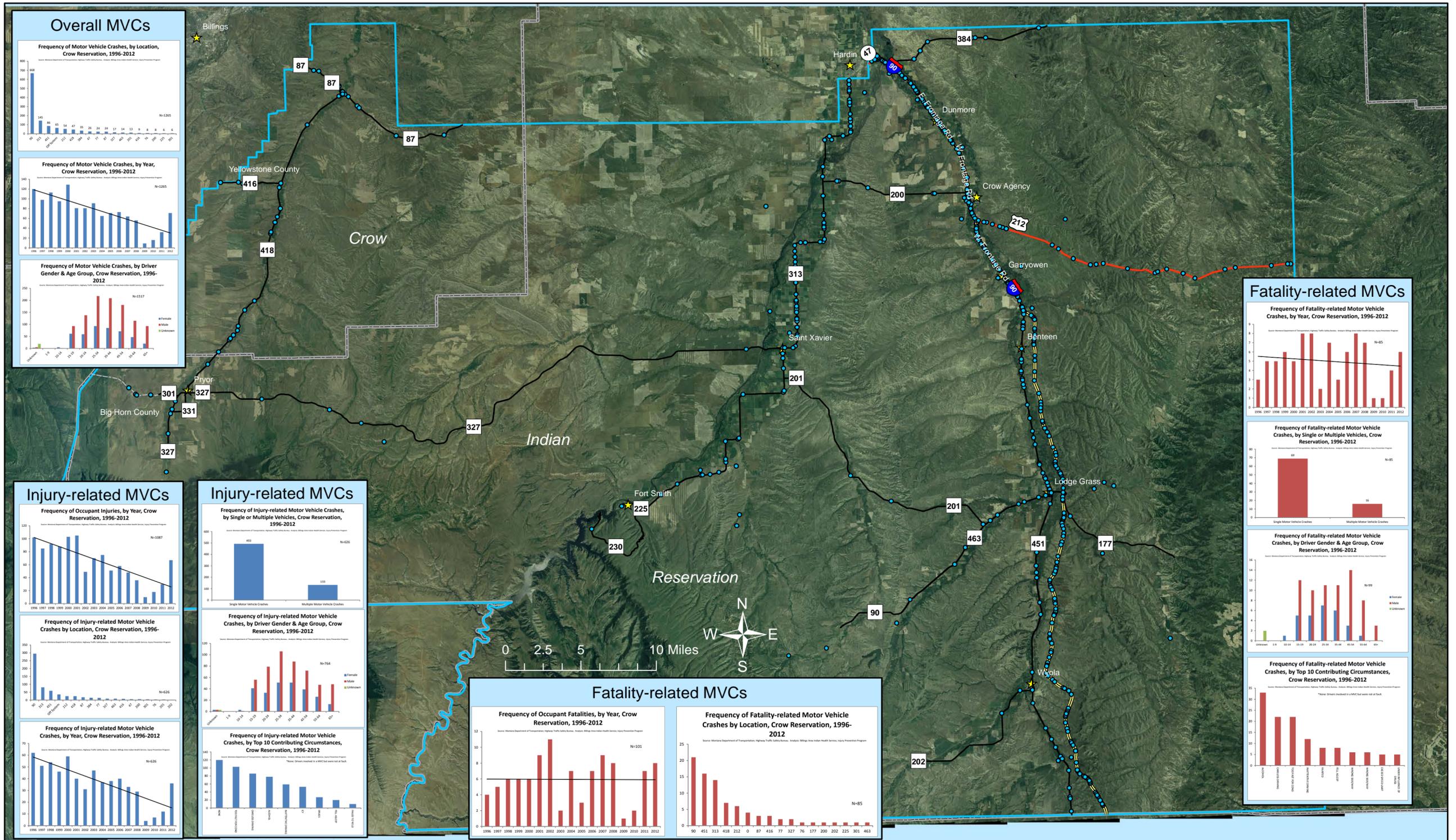


# Crow Tribe Motor Vehicle Crash Site Identification Project

## Motor Vehicle Crash-related Injuries, 1996-2012



**iHS Injury Prevention**  
Advocacy, Outreach and Results



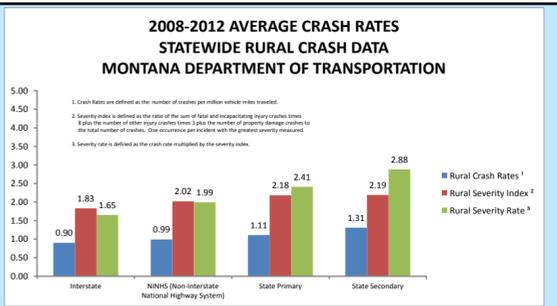
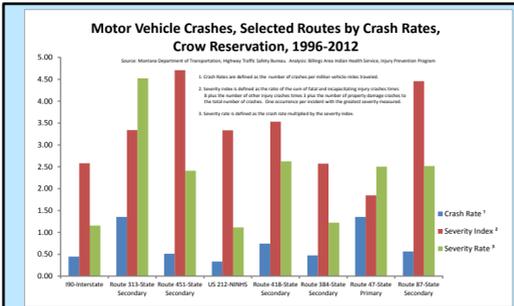
Map created by Darcy Merchant, MPH, REHS, Environmental Health Specialist, Billings Area Indian Health Service, 2014.

### Legend

- ★ Towns
- Injury-related MVC
- ▭ Reservation Boundary
- ▭ County Boundary
- ▭ Interstate
- ▬ State Highway
- ▬ U.S. Highway
- ▬ Secondary Route
- ▬ Unpaved Road

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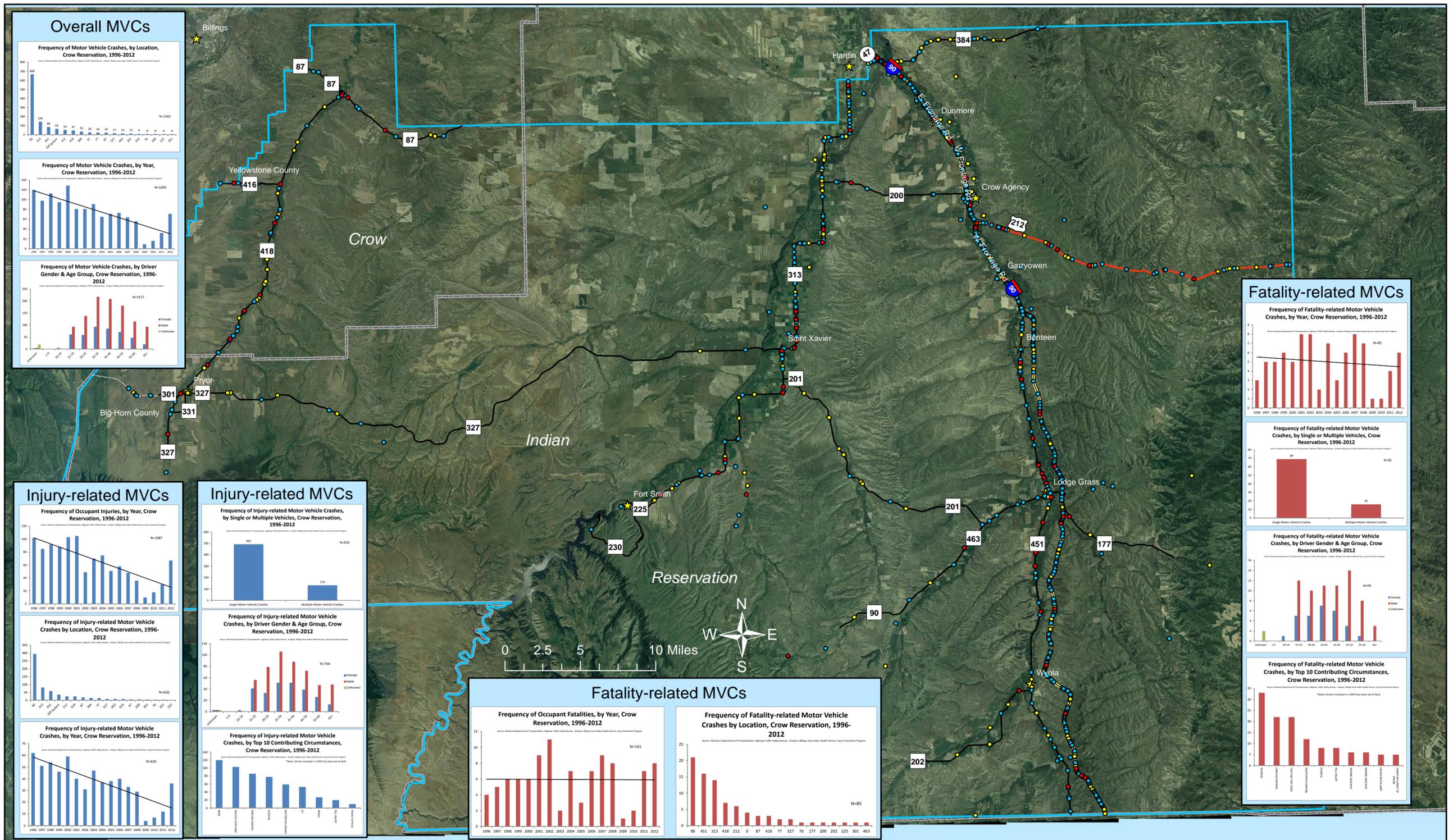




# Crow Tribe Motor Vehicle Crash Site Identification Project

## Motor Vehicle Crash Injuries, Fatalities, and Property Damage, 1996-2012

**iHS Injury Prevention**  
Advocacy, Outreach and Results



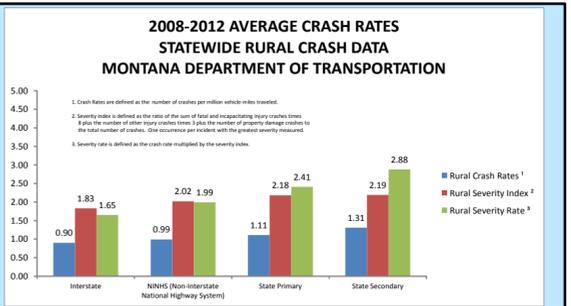
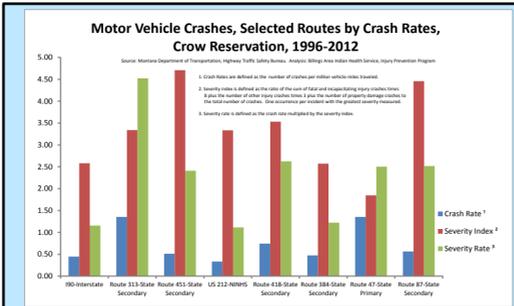
Map created by Darcy Merchant, MPH, REHS, Environmental Health Specialist, Billings Area Indian Health Service, 2014.

### Legend

★ Towns	— State Highway	● Injury-related MVC
▭ Reservation Boundary	— U.S. Highway	● Fatality-related MVC
▭ County Boundary	— Secondary Route	● Property Damage MVC
— Interstate	— Unpaved Road	

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