



U.S. Department
of Transportation
**Federal Highway
Administration**

Office of the Administrator

1200 New Jersey Ave., SE
Washington, D.C. 20590

May 24, 2017

The Honorable Tom Carper
Ranking Member, Committee on Environment
and Public Works
United States Senate
Washington, DC 20510

Dear Senator Carper:

Enclosed is the Report to Congress on Tribal Governments and Transportation Safety Data, which is submitted in accordance with Section 1117(b) of the Fixing America's Surface Transportation (FAST) Act.

The report summarizes the quality of safety data available to tribal governments. Also, this report makes recommendations for improving the quality and availability of safety data in tribal areas. Acting on these recommendations will enable safety analyses that will lead to more effective plans, programs, and project decisions that will address the over-representation of American Indians and Alaska Natives in fatalities and crash statistics in many States.

Similar letters have been sent to the Chairman and Ranking Member of the House Committee on Transportation and Infrastructure, the Chairman of the Senate Committee on Environment and Public Works, the Chairman and Ranking Member of the Senate Committee on Indian Affairs, and the Chairman and Ranking Member of the House Committee on Natural Resources.

I hope this information is helpful.

Sincerely yours,

Walter C. Waidelich, Jr.
Acting Deputy Administrator

Enclosure



U.S. Department
of Transportation
**Federal Highway
Administration**

Office of the Administrator

1200 New Jersey Ave., SE
Washington, D.C. 20590

May 24, 2017

The Honorable John Hoeven
Chairman
Committee on Indian Affairs
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

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1200 New Jersey Ave., SE
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May 24, 2017

The Honorable Tom Udall
Ranking Member
Committee on Indian Affairs
United States Senate
Washington, DC 20510

Dear Senator Udall:

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1200 New Jersey Ave., SE
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May 24, 2017

The Honorable Rob Bishop
Chairman
Committee on Natural Resources
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

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U.S. Department
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**Federal Highway
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Office of the Administrator

1200 New Jersey Ave., SE
Washington, D.C. 20590

May 24, 2017

The Honorable Raúl M. Grijalva
Ranking Member
Committee on Natural Resources
U.S. House of Representatives
Washington, DC 20515

Dear Congressman Grijalva:

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Acting Deputy Administrator

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U.S. Department
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**Federal Highway
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Office of the Administrator

1200 New Jersey Ave., SE
Washington, D.C. 20590

May 24, 2017

The Honorable Bill Shuster
Chairman, Committee on Transportation
and Infrastructure
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

Enclosed is the Report to Congress on Tribal Governments and Transportation Safety Data, which is submitted in accordance with Section 1117(b) of the Fixing America's Surface Transportation (FAST) Act.

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Acting Deputy Administrator

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U.S. Department
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**Federal Highway
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Office of the Administrator

1200 New Jersey Ave., SE
Washington, D.C. 20590

May 24, 2017

The Honorable Peter DeFazio
Ranking Member, Committee on Transportation
and Infrastructure
U.S. House of Representatives
Washington, DC 20515

Dear Congressman DeFazio:

Enclosed is the Report to Congress on Tribal Governments and Transportation Safety Data, which is submitted in accordance with Section 1117(b) of the Fixing America's Surface Transportation (FAST) Act.

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U.S. Department
of Transportation
**Federal Highway
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Office of the Administrator

1200 New Jersey Ave., SE
Washington, D.C. 20590

May 22, 2017

The Honorable John Barrasso
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

Enclosed is the Report to Congress on Tribal Governments and Transportation Safety Data, which is submitted in accordance with Section 1117(b) of the Fixing America's Surface Transportation (FAST) Act.

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Acting Deputy Administrator

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Tribal Governments & Transportation
Safety Data

Report by: Federal Highway Administration
Federal Lands Highway
Office of Tribal Transportation

Primary contributors:

Adam Larsen, Federal Highway Administration and Greg Piland, Federal Highway
Administration

With significant input from the Tribal Transportation Safety Management System Steering
Committee

I. Executive Summary

The American Indian and Alaska Native population is disproportionately represented in fatalities and crash statistics in many States (Washington, 2013). Motor vehicle crashes are the leading cause of unintentional death for American Indians and Alaska Natives (AI/AN) ages 1–44 (Centers for Disease Control and Prevention (CDC), 2014). This report demonstrates crash data is underreported, and if reported the statistics would be even higher.

The circumstances contributing to the underreporting of crashes include but are not limited to privacy concerns, staffing limitations, and lack of equipment and training. This report investigates ways to improve the collection and sharing of crash data so that it is useful for identifying needed improvements to transportation safety in tribal areas.

A survey developed by the Tribal Transportation Safety Management System Steering Committee was made available to all federally recognized Tribes and to the 35 States where these Tribes are located. The Committee received responses from 152 federally recognized Tribes and 22 States; these responses were analyzed to determine the quality of existing tribal transportation safety data, opportunities to improve data collection, options for paperless data reporting, and uses of crash data. This report also documents Federal funding opportunities available to Tribes for crash data improvement.

Proposed action by USDOT agencies is documented below. Implementation of these recommendations will require significant partnership with other Federal agencies. Full implementation of the recommendations will produce safety data, especially crash data, that is useful for planning the programs and projects that will reduce the number of transportation related deaths and injuries in tribal areas.

II. Summary of Recommendations

The following is a summary of the specific actions that USDOT agencies will take to improve the quality and availability of safety data in tribal areas.

- The Federal Highway Administration (FHWA) Tribal Transportation Program Safety Funds, available for federally recognized tribal governments to improve transportation safety, will continue to accept applications based on any form of safety data. However, applicants using data other than police crash reports will now be encouraged to provide a plan showing how the applicant will achieve higher quality data for the future. The process described in National Cooperative Highway Research Program (NCHRP) 788 is one method Tribes could use to assess traffic records.
- The National Highway Traffic Safety Administration (NHTSA) will revise the Traffic Records Assessments Procedures Manual to encourage better coordination between States and Tribes concerning traffic records.
- The FHWA will partner with the BIA Division of Transportation (BIADOT) to investigate incorporating the National Tribal Transportation Facility Inventory (NTTFI) with the All Roads Network of Linear-Referenced Data (ARNOLD) which is being established as a result of the Moving Ahead for Progress in the 21st Century

Act (P.L. 112-141) (MAP-21). A Geographic Information System (GIS) based National Tribal Transportation Facility Inventory would generate roadway data that would be useful for transportation safety studies.

- The FHWA will assist States in communicating with BIA and Tribes when developing annual safety performance targets.
- The FHWA will establish a partnership with the BIA Office of Justice Services to work toward crash data in tribal areas that is more accessible and of higher quality. This partnership will benefit Tribes served by the BIA Law Enforcement Services and tribal police funded by the BIA OJS. This partnership could be in the form of a stand-alone Traffic Records Coordinating Committee or may be a duty of the already established Tribal Transportation Safety Management System Steering Committee. Some of the strategies that this partnership may pursue include the following:
 - Using either the electronic DOI crash form in Incident Management Analysis and Reporting System (IMARS) or a MMUCC-compliant electronic State crash data system. Using State data systems will have advantages in many cases due to integration with other databases (such as location, driver, and vehicle data) and crash data sharing capabilities.
 - Encouraging tribal police to collect data in a format that is compliant with the Model Minimum Uniform Crash Criterion (MMUCC) to the extent possible.
 - Establishing sharing arrangements for crash data to be transferred on a regular basis to tribal and State governments for transportation safety planning purposes. Development of a central database for all DOI law enforcement programs that are using the DOI Crash form. This database could include quality assurance protocols and facilitate streamlined sharing of crash data with Tribes and States.
 - Encouraging Tribal law enforcement agencies to share their crash data (excluding personal identifiers) with other departments of the Tribe and State governments in addition to maintaining databases that are searchable and usable for transportation safety planning purposes.
 - Establishing procedures that ensure the completeness and quality of individual crash reports.
 - Establishing a national crash data clearinghouse for tribal police as an option for those Tribes with concerns about sharing crash data directly with State governments.
 - Documenting guidelines for regular training or guidance to officers on the proper use of the DOI crash form or State crash form.
 - Providing Tribes with clear documentation of the process to establish sharing of motor vehicle crash data under the DOI-10 System of Records Notice.
 - Reviewing processes to centralize and streamline the collection and sharing of crash data.
 - Reviewing the process by which State governments may obtain crash data from BIA Law Enforcement Services for inclusion in the statewide databases and the Fatality Analysis Reporting System (FARS).
 - Documenting the procedures developed by State governments for crash reporting.

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III. Acronyms

AI/AN	American Indians and Alaska Natives
ANSI	American National Standard Manual on Classification of Motor Vehicle Traffic Accidents
ARNOLD	All Roads Network of Linear-referenced Data
BIA	Bureau of Indian Affairs
BIADOT	Bureau of Indian Affairs, Division of Transportation
BIA IHSP	Bureau of Indian Affairs, Indian Highway Safety Program
BIA-OJS	Bureau of Indian Affairs, Office of Justice Services
CDC	Centers for Disease Control
CFR	Code of Federal Regulations
CTAS	Coordinated Tribal Assistance Solicitation
DOI	Department of Interior
DOT	Department of Transportation
EMS	Emergency Medical Services
FAST	Fixing America's Surface Transportation Act
FARS	Fatality Analysis Reporting System
FBI	Federal Bureau of Investigation
FLH	Office of Federal Lands Highway
FHWA	Federal Highway Administration
FOIA	Freedom of Information Act
FY	Fiscal Year
EMS	Emergency Medical Service
GIS	Geographic Information System
HSIP	Highway Safety Improvement Program
IMARS	Incident Management, Analysis, and Reporting System
MAP-21	Moving Ahead for Progress in the 21 st Century Act
MIRE	Model Inventory of Roadway Elements
MMUCC	Model Minimum Uniform Crash Criteria
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTTFI	National Tribal Transportation Facility Inventory
OMB	Office of Management and Budget
RSA	Road Safety Audit (also known as Road Safety Assessment)
SAFETEA	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SMS	Safety Management System
SSP	Strategic Safety Plan
TTP	Tribal Transportation Program
TRB	Tribal Research Board
TRCC	Traffic Records Coordinating Committee
USC	United States Code
US	United States
USDOT	United States Department of Transportation
VPSO	Village Public Safety Officers

IV. Introduction

Given the under-reporting of crashes in tribal areas that is described later in this report, one would expect the AI/AN population to be underrepresented in crash statistics. Unfortunately, the converse is true in many States. The limited data that is available often describes a transportation safety picture that has greater impacts on AI/AN than the rest of the United States' general population. One such example is in Target Zero®, Washington State's Strategic Highway Safety Plan, which describes "the traffic fatality rate for Native Americans is 3.9 times higher than for non-Native Americans." (Washington, 2013) Fatal motor vehicle crashes touch nearly every tribal area (Figure 1 is a map showing the locations of fatal motor vehicle crashes in or near tribal areas from 2010-2016). Transportation safety is also a concern for Tribes with few or no roads where tribal members experience injury and loss of life while traveling on trails, winter trails, waterways, and other transportation facilities.

Improved collection and sharing of safety data, especially crash reports, in tribal areas would facilitate more effective transportation safety planning and would afford Tribes improved access to State and Federal funding opportunities to address transportation safety problems. Better quality safety data will enable enhanced analysis of the nature of safety challenges and more effective selection and implementation of transportation safety strategies.

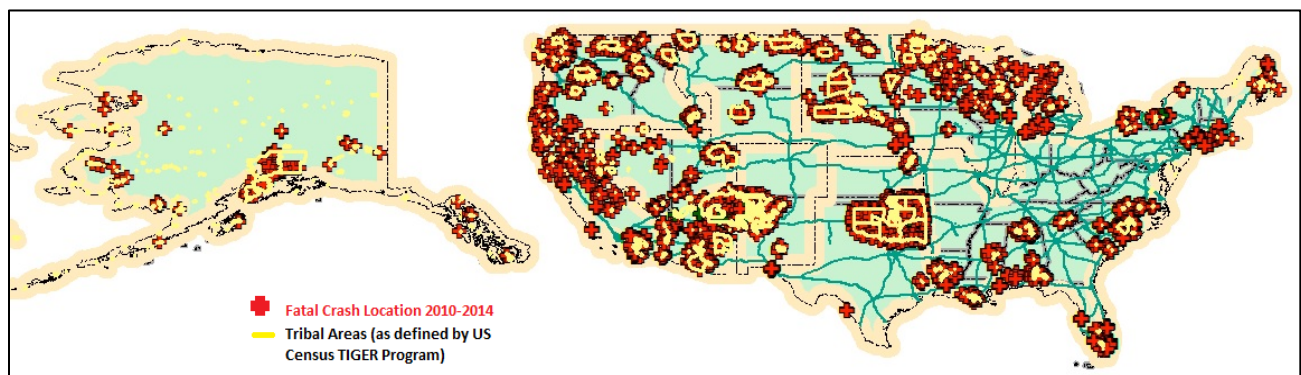


Figure 1. Map showing fatal crash locations reported to the Fatality Analysis Reporting System (FARS) for 2010-2014 within six miles of tribal areas

The Fixing America's Surface Transportation (FAST) Act, enacted on December 4, 2015, directed the Secretary of Transportation to complete this report about tribal governments and transportation safety data. The report was developed in consultation with representatives of the Secretary of the Interior, the Secretary of Health and Human Services, the Attorney General, tribal officials, and others in accordance with the requirements of FAST Act Section 1117(b).

The FAST Act further directs the Secretary of Transportation to develop a second report that identifies and evaluates options for improving safety on public roads in tribal areas. The second report is described in Section 1117(c) and is due by December 2017. The second report will build upon this report relative to transportation safety data and tribal governments of Section 1117.

The content of this report:

- Describes the quality of existing safety data.
- Recommends improvements to the collection and sharing of crash data that can be used to recover damages to tribal property, identify trends in crash data, and allow Tribes to more successfully compete for funding opportunities.
- Identifies electronic crash reporting options available to tribal governments.
- Identifies Federal transportation funding for safety data improvement.

A. Under-reporting of motor-vehicle crash data

State and national crash databases are often used to drive policy, program, and project decisions by State and Federal Governments. Analysis of these databases leads to the selection of roadway safety improvements through the Highway Safety Improvement Program (HSIP), an annual funding program, which made \$2.1 billion dollars available to States in Fiscal Year (FY) 2016 (FHWA, 2016). Unfortunately, many Tribes are not adequately represented in these State and national databases because crash data collected by some BIA Law Enforcement Services agency offices and tribal law enforcement is not shared with State governments for a variety of reasons including privacy concerns and inadequate resources. In addition, some incidents go completely undocumented. This report further describes the evidence of under-reporting in the section on data quality.

Previous studies have identified concerns about motor vehicle crash data collection and sharing for tribal areas in specific States. One study found that the South Dakota statewide crash database was severely lacking in tribal areas where tribal and BIA police were not sharing crash data. The underreporting was so significant that the study recommended the State of South Dakota not pursue further safety analysis for tribal areas in the State until data sharing arrangements could be made (Drake, Sparks, & Thomaz, 2005). The Washington Traffic Safety Commission provided documentation showing that from 2004-2015, only 4 of the 29 federally recognized Tribes in Washington State consistently reported crash data.

For crashes that are reported to State and national databases, the identification of ethnicity is an additional concern. For fatal crash victims, this information is usually obtained from a death certificate or as identified by next of kin when available. There is concern that American Indians and Alaska Natives are occasionally incorrectly identified as another race, reported as mixed race, or reported as unknown race. This limitation affects national level research on transportation safety in tribal areas. A research proposal about the identification of race in crash reports is underway by the Transportation Research Board (TRB) subcommittee on Tribal Transportation.

B. Under-reporting of off-roadway incident data

While the focus of this report is on motor vehicle crashes on roadways, it is important to note that many Tribes, primarily those located in Alaska, make significant use of other transportation facilities such as trails, snow machine trails, board roads, and water routes. For these Tribes, transportation safety focuses on different topics than roadway safety but is just as important; these safety efforts can also be enhanced through the collection of incident data. Often there is no method in place by which incident data is collected for off-roadway events. The majority of Tribes in Alaska do not have tribal law enforcement, there is no BIA law enforcement presence

in Alaska, and the Alaska State Troopers are spread very thin with significant logistical concerns. Alaska State Troopers place peace officers known as Village Public Safety Officers (VPSO) in some villages. When VPSO and/or tribal police are present in a village, they do not usually complete crash reports for transportation incidents. If a crash report is completed, it is often the same report form available to any member of the public to report their involvement in a crash where law enforcement was not on scene, rather than the Alaska State law enforcement crash report form.

Some tribal governments have developed filing systems to record incidents at a local level for safety planning and grant application purposes. There is no system in place for these record systems to be shared on a statewide basis. An example is the Native Village of Napaimute. The Tribe's transportation department has coordinated with search and rescue crews in the area who respond when an individual traveling between villages does not arrive as expected. When such an incident occurs, the transportation department gathers information in a narrative format, includes any pictures or news articles, and keeps the information in a filing cabinet for future use.

V. Existing National Safety Databases

Safety data includes many different data types, each of which can enhance data analysis capabilities. This report focuses on crash data with some consideration of roadway and traffic volume data which can then be used to analyze the crash data. Several national databases are discussed in the remainder of this report; a brief description of these national databases is set forth below.

Databases on drivers, injuries, vehicles, and citations are all examples of safety data which may or may not exist in national database or be linked to any individual crash database. These data sources are beyond the scope of this report.

1. Fatality Analysis Reporting System (FARS)

The NHTSA developed a national database, known as FARS, to collect information from multiple State data sources about deaths that occur within 30 days after motor vehicle traffic crashes. This information is used at all levels of government to inform public policy, provide statistical information, evaluate vehicle designs, and influence decisions on projects and programs to improve transportation safety. The FARS data is available at <http://www-fars.nhtsa.dot.gov/>.

While FARS is generally regarded as being the best available and most complete information on fatal crashes, the research conducted to develop this report found evidence of gaps in this database in tribal areas. All State governments voluntarily submit fatal crash data to FARS. However, Federal agencies and Tribes are not required to share their crash data with State government or FARS. The sharing of fatal crash reports by tribal police varies from Tribe-to-Tribe. The crash reports completed by law enforcement departments under the DOI including BIA Law Enforcement, are usually only included in FARS on a case-by-case basis when the State requests information from the DOI or when the BIA Law Enforcement are notified because the responding BIA agency office is completing State crash forms.

The NHTSA funds a FARS analyst in every State who is responsible for populating fatal crash information into the FARS database. The FARS analysts use multiple data sources to obtain information when they learn that a crash has resulted in a fatality. This includes direct contact with tribal and BIA Law Enforcement.

2. Incident Management, Analysis, and Reporting System (IMARS)

The DOI has implemented a records management system known as IMARS. This system is intended to be used to document all law enforcement actions by the DOI, not just motor vehicle crashes. The IMARS has the capability to document crashes through a narrative report or the DOI crash form. Attachments can be added to either of these formats and some BIA Law Enforcement Services agency offices are completing State crash forms and attaching those to their IMARS entry.

3. National Tribal Transportation Facility Inventory (NTTFI)

The BIA maintains a national inventory of public transportation facilities eligible for expenditures from the TTP to fulfill the requirements of 25 CFR 170. These surface transportation facilities include roadways, trails, board roads, and marine terminals. This inventory includes State, county, city, tribal, and BIA routes of interest to tribal governments. Roadways in this inventory are required to be open to public travel. Geolocation of the inventoried routes is currently not available but would greatly improve the usability of this data for safety studies. Additional information about the NTTFI can be found at <https://itims.bia.gov/reports.shtml>.

4. Web-based Injury Statistics Query and Reporting System (WISQARS)

The CDC's WISQARS is an online, publicly accessible database of fatal and non-fatal injuries and violent deaths caused by a variety of reasons, including motor vehicle crashes. The WISQARS uses the 10th revision of the International Statistical Classification of Diseases and Related Health Problems medical diagnosis codes to classify injuries. For transportation injuries, these codes provide collision type and whether the injured person was a vehicle occupant, pedestrian or motorcyclist. Death data comes from a national mortality database compiled by CDC's National Center for Health Statistics. This database contains information from death certificates filed in State vital-statistics offices and includes causes of death reported by attending physicians, medical examiners, and coroners. It also includes demographic information about decedents reported by funeral directors, who obtain that information from family members and other informants. American Indian and Alaska Native injury data is found in WISQARS features for fatalities and is available by national, State, and county levels. The WISQARS allows users to sort, search, and review the data and create reports, charts, maps and graphics. The WISQARS data is available online at <http://www.cdc.gov/injury/wisqars/>.

VI. Safety data quality

A. Roadway Inventory Data Standards & Quality

Roadway and traffic data provide useful information for transportation safety analyses. Using comprehensive crash reporting in combination with adequate roadway and traffic data would enable proven study methods, such as those found in the Highway Safety Manual, to be effectively conducted for tribal areas.

Some Tribes have adequate data to conduct roadway network screening for safety issues but those studies are limited to the Tribe and cannot be conducted on regional or national scales. Tribes that are interested in developing a roadway inventory should consider the Model Inventory of Roadway Elements (MIRE). This roadway inventory standard was established by FHWA in 2010. MIRE describes the elements needed to support advanced safety analysis using analytic tools such as those found in the Highway Safety Manual. More information about MIRE can be found at <http://safety.fhwa.dot.gov/rsdp/mire.aspx>.

At a national level, the most comprehensive roadway inventory that would indicate a Tribe's transportation interest in specific roadways is the NTTFI. Facilities in the NTTFI are eligible for expenditure of TTP funding. The NTTFI includes several data elements about each roadway. Traffic volumes are included, but they are incomplete for older routes and are not frequently updated. Unfortunately, this data does not include geospatial information necessary to conduct a national-level safety analysis.

Another effort that may prove useful for national-level analysis is the ARNOLD. When completed, ARNOLD will be a complete Geographic Information System (GIS) capable network of all public roadways, including those on Indian Reservations, with the exception of some gravel roadways. The MAP-21 required the Secretary to establish a subset of the Model Inventory of Roadway Elements (MIRE) that is useful for the inventory of road safety under the Highway Safety Improvement Program (HSIP). The FHWA issued a final rule on March 15, 2016, establishing the minimum subset of MIRE roadway data elements to be collected. This data could be useful in combination with NTTFI, ARNOLD, and crash data for conducting national, regional, and tribal safety studies. There may be opportunities for the NTTFI and ARNOLD data sets to be integrated. If a link is established between the data sets, then GIS-based safety studies could focus on the roads that are of interest to Tribes. The FHWA can partner with the BIADOT to investigate opportunities to link these databases.

B. Crash Data Collection Standards

The MMUCC is a guideline that presents a set of data elements that should be used for describing a motor vehicle crash. The MMUCC Guideline is based on two other data standards, American National Standard Manual on Classification of Motor Vehicle Traffic Accidents (ANSI) D16 (for classifying motor vehicle traffic crashes) and ANSI D20 (for promoting uniformity in the transmission of records between jurisdictions) (MMUCC, 4th Edition, 2012). The use of MMUCC data elements generates data that can be employed to make more informed decisions which will lead to improvements in safety at the national, State, local, and tribal levels. States and Tribes are encouraged to adopt as many recommended MMUCC data elements as possible when they next update their Police Crash Report forms.

Through MAP-21 implementation, all States are now required to report serious injury crashes using a single, national definition and coding convention titled “Suspected Serious Injury (A)” as defined by MMUCC 4th Edition. This is the only mandatory MMUCC data element. The fourth edition of the MMUCC guidelines is the most current available version. This standard includes 77 crash factors that should be recorded on-scene. Another ten data elements can be derived from the on-scene information. Finally, it is recommended by MMUCC that 23 additional data elements be obtained through linkage with other databases.

C. Crash Data Quality

The USDOT defines the quality of crash data in six attributes: timeliness, accuracy, completeness, uniformity, integration, and accessibility. An assessment of an individual database should consider these six factors. This report will address these six items in general terms based on the survey responses but it is important to note that the crash data situation for each Tribe will be unique. Each of the six data quality attributes are defined as follows:

- ***Timeliness:*** Information should be available within a specific timeframe to allow for meaningful analysis of the current status of the issue under investigation (e. g., the number of injury crashes at a specific location within a limited timeframe).
- ***Accuracy:*** Information within the database should be correct and reliable in describing the data element it purports to describe. Accuracy is typically enhanced through the practice of conducting consistency checks and validations on the data being entered into the database.
- ***Completeness:*** Information within the database should be complete in terms of all reportable instances of the event/characteristic being reported and available within the database, and all required data elements within the record should be completed with appropriate responses. Completeness is also typically enhanced through the practice of conducting consistency checks and validations on the data being entered into the database.
- ***Consistency/Uniformity:*** Information collected should be consistent among all reporting jurisdictions using the same reporting threshold and reporting the same information on a standard data collection form(s). Ideally, information will be reported using nationally accepted and published guidelines and standards such as the MMUCC.
- ***Integration:*** By using common data elements, information in one database should be capable of being linked with information from other databases. Common examples of integration are the linkage of crash data with roadway linear referencing systems (maps), driver’s license databases, and vehicle databases.
- ***Accessibility:*** Information within the database should be readily available to all eligible users of the information. Without the sharing of crash data between government entities it is difficult to obtain a complete data set. This is particularly true in areas where multiple enforcement agencies may report on crashes. (NHTSA, October 2015) (Pollack, Boodlal, J.Emery, & Souleyrette, 2010)

This report finds that the quality of crash data readily available to tribal governments is generally poor. However, the agency which is reporting crash data greatly influences the quality of the data obtained. Table 1 summarizes crash data quality for the most common crash data collection scenarios in tribal areas.

A tribal government may have law enforcement services provided by multiple entities. Law enforcement jurisdiction in tribal areas can be complex and may vary depending on road ownership, political boundaries, or tribal enrollment status of the individuals involved. It is important to understand the variety of law enforcement providers because each entity may handle crash data in a different manner and various agencies may report crashes to separate databases for any one tribal area.

One of the determining factors for law enforcement service providers in tribal areas is the status of each Tribe under Public Law 83-280 (P.L. 83-280) which transfers jurisdiction over criminal and civil matters from the Federal Government to some State governments. This law was enacted in 1953 and at the time only applied to most Tribes located within five States. Since that time, additional Tribes have entered into P.L. 83-280 status or had a similar transfer of civil and/or criminal jurisdiction from Federal to State government. The P.L. 83-280 currently applies to at least some of the Tribes in 23 of the 35 States with tribal areas. The P.L. 83-280 currently does not apply to any Tribes located in Wyoming, Virginia, South Dakota, Oklahoma, North Carolina, New Mexico, Mississippi, Michigan, Louisiana, Arizona, Nevada, and Alabama (Good, 2016). Traffic collisions are typically a civil matter covered under P.L. 83-280 but can become a criminal matter when vehicular assault, vehicular homicide, or other criminal charges are involved.

Although Federal jurisdiction is transferred to States by P.L. 83-280, Tribes continue to have concurrent jurisdiction over civil and criminal matters for tribal members. As a result Tribes in P.L. 83-280 States also have the authority to develop courts and law enforcement departments.

	Timeliness	Accuracy	Completeness	Consistency Uniformity	Integration	Accessibility
BIA Law Enforcement IMARS narrative only	Immediate in IMARS; significant delay for State databases	While the information is accurate it will often not include desired details; Location accuracy often difficult to ascertain.	Does not capture all desired data	Standard data elements often not captured	No integration	Very difficult to access or search
BIA Law Enforcement IMARS with DOI Crash Form	Immediate in IMARS; some delay for State databases	Accuracy typically not evaluated	Completeness not typically evaluated	MMUCC Compliance	DOI crash forms will be linked to IMARS where additional information about an event may be housed.	Not yet accessible but DOI project will add this capability. DOI intends to share data with FARS; Uncertain of sharing with State databases.
BIA Law Enforcement IMARS with State Crash Form	Immediate in IMARS; normal delay for State databases	Accuracy typically not evaluated; State may ask for corrections if report does not pass validation	Completeness may be checked if State software is being used.	MMUCC Compliance	Optimal use of IMARS because of full integration with State data; may include linkage to road and injury data.	Typically accessible through State
Tribal Law Enforcement using Tribe's Database	Typically some lag due to supervisor review	Varies	Varies; standalone databases are often incomplete as they do not capture crashes reported by other agencies (State, county, city)	Varies	Varies	Varies; Tribe typically has access but others do not.
Tribal Law Enforcement using State Crash Form	Typically some normal lag due to supervisor review; often no sharing with State databases	Typically supervisor checks completeness and must pass database validation	Typically supervisor checks completeness and must pass database validation	MMUCC Compliance	Integrated if tribe shares reports with State; use of State form does not obligate sharing.	Typically accessible through State or tribe
State and County Law Enforcement	Typically some normal lag due to supervisor review	Typically supervisor checks completeness and must pass database validation	Typically procedures in place to evaluate completeness but often willing to accept partially complete reports as long as critical details are provided.	MMUCC Compliance	Typically reports are submitted directly to the State database	Typically accessible through State

Table 1. Summary of Data Quality by Data Source

1. Federal Bureau of Investigation (FBI)

For some Tribes in non-P.L. 83-280 States, the FBI may conduct an investigation when a crash appears to result in serious injury or death. When the FBI conducts an investigation, it does produce a detailed narrative report. However, FBI is not usually the first responder and is not always on scene to investigate. Thus, completing a standard crash report form would still be the responsibility of the other responding law enforcement agency (BIA or tribal police). This is similar to the way in which many State police operate. The primary crash form is completed by the responding officer but further investigation may be conducted by a crash reconstructionist or investigator and documented in a separate report. A long-standing Memorandum of Understanding exists between BIA-OJS and the FBI that determines which entity will generally be assigned an investigation.

2. BIA Law Enforcement

Several survey respondents indicated that BIA did not share crash data with the State or Tribe except on a case-by-case basis for ongoing investigation or adjudication. Others report that some BIA Law Enforcement Services agencies are using a State crash form and submitting that document to both the State crash database and IMARS.

While nationwide studies on crash data availability are limited, one study conducted on the Wind River reservation identified a significant lack of crash sharing between BIA Law Enforcement Services and the Wyoming DOT. The study determined that data was only available on six roads on the reservation. Further, the study shows 32 percent of the reported crashes did not have sufficient information to determine the crash location. (Shinstine D. S., 2013)

While crash data available from BIA-OJS may be adequate for law enforcement purposes, many Tribes and States have had difficulty gaining access to that data and have found the reports may not be of the necessary quality to be useful from the perspective of engineering and planning studies. The BIA law enforcement officers are required by BIA-OJS to record all incidents with an incident description in IMARS.

The process for crash reporting varies from one BIA Law Enforcement agency office to another. There are three known practices in place: IMARS narrative only, IMARS using DOI Crash Report form, or IMARS using State Crash Report form. The data produced by each of these BIA IMARS practices differ in quality according to the six FHWA/NHTSA crash data quality attributes that were introduced previously. Each of the three known crash data collection practices utilized by BIA Law Enforcement Services will be discussed separately below.

a) *IMARS Narrative Only*

For some BIA Law Enforcement Services agency offices, the policy is to only complete a narrative incident report in IMARS. These reports contain several standard attribute fields that are applicable to a police report for any type of incident, with the rest of the documentation being purely narrative. Among the three BIA crash data collection methods examined, this is the least useful for safety planning purposes because there is no consistency and conclusions on crash trends would be very difficult to extract.

Data from IMARS narratives is not available in any crash database unless another agency also responds and completes a report or significant post-processing is done to transfer the report to a crash database. It is common for BIA Law Enforcement to call on another agency, typically State law enforcement, to assist in investigation and reconstruction of fatal and serious injury crashes. This results in more complete reporting of fatal and serious injury crashes to State and national databases than those that are less severe (Huft, 2008).

The Standing Rock Sioux Tribe realized the importance of sharing crash data with the North and South Dakota State DOTs. The BIA is the primary enforcement agency on the reservation and uses a different electronic crash reporting system than the States. The BIA's narrative crash reports in IMARS are not readily compatible with the States' Traffic and Criminal Software (TraCS) systems, and to release the reports, the BIA also needs an approved Freedom of Information Act (FOIA) request. The Tribe partnered with BIA Law Enforcement and the State Highway Safety Offices to arrange transfer of the IMARS reports into TraCS. The process involved the Tribe writing a FOIA Routine Use Agreement for the release of the reports, BIA Law Enforcement staff printing each of those reports and releasing them to the Tribe's Traffic Safety Coordinator, and the Tribe's Traffic Safety Coordinator manually translating them into the TraCS system. The States provided the TraCS software and offer training and technical support to the Tribe's Traffic Safety Coordinator. While the procedure could be more efficient, the effort is laudable to ensure complete crash data is then available in a format that is useful for safety programs and analyses.

As stated previously, the process for crash reporting varies from one BIA agency office to another. The data produced by when only IMARS narrative reports are used to record crashes is evaluated below according to the six crash data quality attributes previously identified.

- **Timeliness**
 - Reports are submitted directly into IMARS when an officer completes them. The reports are available to BIA in IMARS almost immediately. Incidents are tracked from initial entry through final investigation.
- **Accuracy, Completeness, and Consistency/Uniformity.**
 - The interviews and surveys completed for this report did not identify any procedures by which BIA IMARS narrative reports are being checked for accuracy or completeness.
 - When the incident is recorded only by narrative, the accuracy and completeness cannot be evaluated because there is a limited set of information being collected. In addition, it is extremely difficult to integrate narrative reports into a usable database format. The uniform information collected in this format usually includes: incident time/date, reported time/date, people involved (name, gender, birthday, address, driver's license number), addresses involved, vehicles involved (year, make, model, registration, VIN), and type of accident i.e., (property damage only, injury, or fatality). All additional information is in the form of a narrative written by the reporting officer and the dispatcher.
 - The Standing Rock Sioux Tribe recently evaluated 2015 data collected by BIA Law Enforcement in an effort to share that data with the State of South Dakota's database. The comparison between the BIA narratives and the State crash report

form concluded that many elements must be marked “unknown” in the State system.

The effort found that although officers are trying to be descriptive, they often leave out details that are not intuitive if the form does not prompt them. This includes information such as latitude/longitude, relation to roadway, intersecting street names, harmful event info, weather conditions, light conditions, road conditions, driver behaviors, occupant protection use, and other data elements that would be captured on a MMUCC compliant crash form.

- **Integration**
 - No integration currently exists between the BIA IMARS narrative reports and any other data sets.
- **Accessibility**
 - According to the surveys and interviews that were conducted, crash data collected by the DOI is generally not accessible by other organizations or can only be obtained after following an arduous process. This topic is discussed further later in this report.
 - Narrative reports are filed using general categories that do not serve well when trying to retrieve data. The BIA provided 2014 crash data from IMARS where each individual event was categorized by either crash severity or contributing factor, not both. For example, one crash might be categorized as "Accident investigation – Injury” while the next is categorized with no mention of severity as “Accident Investigation – DWI.”

b) IMARS using DOI Crash Form

The IMARS recently added the ability to collect uniform crash criteria using the DOI Investigator’s Traffic Crash Report form (herein “DOI Crash Report”). A copy of this form is included as Appendix A. Although the DOI crash report can be used, it is not mandatory for all BIA law enforcement officers. Some agency offices are requiring officers to use the report while others are not. A coding guide for the form was not immediately available, but the crash criteria being collected appear to be at least partially compliant with MMUCC standards.

Below is an evaluation of the data produced by the DOI Crash Reports according to the six crash data quality attributes previously identified.

- **Timeliness**
 - Reports are available in IMARS immediately after being completed by an officer.
- **Accuracy**
 - The interviews and surveys completed for this report did not identify any procedures by which DOI crash reports were checked for accuracy. A guidebook or training could be developed to assist officers in understanding the intended use of the crash form.

The image shows a screenshot of a form titled "DEPARTMENT OF THE INTERIOR INVESTIGATOR'S TRAFFIC CRASH REPORT". The form is divided into several sections:

- Page 1 of 2 Pages** (top left)
- Case No.:** (top right)
- Investigation at the scene:** with checkboxes for "Yes" and "No".
- Hit and run?** with checkboxes for "Yes" and "No".
- Non-motor vehicle property damage:** with checkboxes for "Yes" and "No".
- Amount:** (field)
- Section 1: Basic Information** (includes fields for Date, Time, Location, etc.)
- Section 2: Basic Information** (includes fields for Vehicle, Driver, etc.)
- Section 3: Witnesses** (includes a table for recording witness names and phone numbers)

Figure 2. DOI Investigator’s Traffic Crash Report Form (see Appendix A)

- **Completeness**
 - All fields are optional on the form. However, use of the form is anticipated to produce much more complete descriptions of the incidents than the narrative method previously described because the officer is being prompted to report on uniform crash criteria.
 - The report does allow for a narrative description of the incident and the creation of a crash diagram.
- **Consistency/Uniformity**
 - The DOI crash form uses uniform crash criteria that are substantially compliant with the MMUCC standard. This should result in some uniformity between State data and BIA data. However, when different forms are used by different agencies, the result can be that the same criteria is interpreted differently when it is intended to collect the same uniform data. The continued use of State crash report forms may be preferable to the DOI crash form and States may be able to write software that provides regular updates to the DOI database if that is desired.
- **Integration**
 - The DOI crash form is not integrated with other data sets such as driver, vehicle, or linear referencing systems.
- **Accessibility**
 - Crash data collected by the DOI is generally not readily accessible by other organizations. This topic is discussed further later in this report.
 - The BIA-OJS indicated that no database is currently available which would assemble the uniform data fields from all crash reports into a tabular format.
 - The BIA-OJS also indicated that no integration between the DOI crash report form and state crash databases currently exists.
 - Institutional barriers and staff availability to retrieve crash data may still need to be addressed to permit timely sharing of crash data with Tribes and States.

c) IMARS using State crash form

Some BIA Law Enforcement Services agency offices complete a State crash report form and then simply upload an electronic copy as an attachment to their entry in IMARS. Using this approach to crash data collection allows the BIA to share crash data with the State database while simultaneously fulfilling the requirement to report in IMARS. This approach currently results in the highest quality crash data collection by BIA Law Enforcement.

It is unclear if this method of crash data collection will continue to be allowed or if all BIA Law Enforcement Services Agencies will be required to transition to using the DOI crash form. At this time, this is the best practice available for the collection and sharing of crash data by BIA Law Enforcement in a way that is available for safety studies.

Finally, the data that is produced when BIA Law Enforcement officers use a State crash form is evaluated below according to the six crash data quality attributes that were previously identified.

- **Timeliness**
 - As with the other IMARS methods, the data is available immediately in IMARS. If State crash forms are being provided to the State then normal delay would occur in validating or entering the information into the State database. Additional

delay can occur if the State rejects a report or requests clarification due to incompleteness or validation issues.

- **Accuracy**
 - Typically BIA officers submit their data to IMARS without supervisory review. However, State DOTs have completeness and data validation procedures in place to ensure that the crash reports contain sufficient and logical information.
- **Completeness**
 - As mentioned there are benefits of the State database checking for completeness of the required fields on individual reports. In addition, the use of the State crash form enables the statewide databases to be complete with reports from all law enforcement entities.
- **Consistency/Uniformity**
 - All State crash forms collect crash criteria that are at least partially compliant with MMUCC. When all reporting law enforcement agencies use the same form, there are additional enhancements to the consistency.
- **Integration**
 - Integration with other data sources (such as driver's licenses, vehicle databases, and linear referencing) should typically be available if BIA Law Enforcement officers are able to use the State's crash reporting software. For example, many State electronic crash reporting systems are integrated with a mapping solution that allows precise identification of crash locations and may even aide in the development of a crash diagram. In some instances, BIA Law Enforcement Services agency offices have been unable to benefit from integrated State software due to information technology security protocols.
- **Accessibility**
 - All 18 State governments that responded to a survey question asking about tribal access to crash data in the statewide database indicated that there is a process by which Tribes can obtain data from the statewide database. Some States also indicated that they have analysis tools which Tribes could use. Some of these are computer systems that the Tribe can access directly via a website or software. Others require a written request be sent to the State. In some cases, automated reports can be generated for Tribes from a State database on a regular, reoccurring basis. Tribes with BIA Law Enforcement that are using the State crash report form should be able to obtain crash statistics for the tribal area from the State crash database or BIA.

3. Tribal Police

Tribal governments most commonly establish police departments through a self-determination contract (Public Law 93-638) with BIA-OJS. Others in law enforcement are employed directly by the Tribe. Tribes create police departments for many different reasons and in some cases the responsibilities of these officers do not cover motor vehicle crashes. However, many tribal police departments do respond to and report on motor vehicle crashes. The methods used by Tribes to collect crash data vary greatly. The observations below are the results of the survey that was conducted for this project. This does not necessarily represent all tribal police departments.

Seventy-two of the responses to the survey indicated that the responding Tribe had a tribal law enforcement department. Of these, 63 percent indicated that they do not share crash reports with the State DOT. Some respondents indicated that crash reports are only shared with the State when the crash occurs on a State-owned road.

Some tribal police departments indicated that they do not have a crash reconstructionist on staff and rely on other law enforcement agencies (typically State police) to conduct the crash investigation when a fatality or serious injury occurs. This can result in higher severity crashes being more likely to be reported to statewide databases than lesser severity crashes. Several Tribes further indicated that they intend to train officers in crash reconstruction so that all crash investigations could be handled in-house.

Tribal police may have limited authority for various reasons. In the optimal situation, law enforcement officers are cross-deputized with tribal, State and county law enforcement which provides the authority to also enforce State and local laws. In addition, a cross-deputized officer can take action with traffic law violators regardless of tribal membership or reservation boundaries, and may be able to more readily utilize State crash reporting systems. Several survey participants indicated that tribal and BIA police are unable to enforce traffic law violations with individuals who are not members of a Tribe. One tribal police department provided this comment: *“[Tribal police are] not allowed to pursue offenders beyond the reservation boundaries. Offenders know this now and run recklessly and at high speeds for the reservation line.”*

Tribal police departments are not required to share crash data with any other government and often avoid sharing data due to a variety of concerns which are addressed later in this report. The result is that the State and national databases which drive policy, program, and project decisions are incomplete in tribal areas. Without complete data sets, it is difficult for State and Federal programs to make informed decisions about programs and projects which have the potential to improve transportation safety for tribal governments. State-managed Federal funding sources, such as the Highway Safety Improvement Program (HSIP), require a data-driven process be followed to identify programs and projects to be implemented. The HSIP specifically requires the inclusion of tribal roads in the data-driven process. However, if crash data is not shared with the State, then safety data in analyzed tribal areas inaccurately appear to have the safest roads in the State and therefore may be overlooked when program and project decisions are made.

One example of crash data not being shared occurs on the Salt River Indian Reservation in Arizona. The Salt River Police Department collects all crash data unless the incident occurs on a State-owned roadway. The Salt River Police Department does not share crash data with the State of Arizona. A comparison of fatal crash dates and locations between FARS and data provided by tribal police confirmed that between 2010 and 2014, six fatal crashes occurred on the reservation that were not recorded in FARS.

Similar significant under-reporting of fatal crashes occurred on the Colville Indian Reservation in Washington. A study looked at fatal crash locations between 2007 and 2013 to determine completeness of crash reporting on the reservation. Sixteen fatal crash sites were identified by

the study, with six of those fatal crash sites being undocumented in FARS, State, and tribal police crash databases. Interviews were conducted with the families of the crash victims to obtain an understanding of what occurred in these six cases and to confirm that the crashes occurred during the study time period. (Amundson, 2015)

As a third example, from 2011 to 2013 the Rosebud Sioux Tribe Law Enforcement Services recorded 421 injuries and 18 fatalities from motor vehicle crashes. During the same time period, the South Dakota DPS database shows 12 injuries and one fatality resulting from motor vehicle crashes. These differences in data highlight the lack of data sharing that is occurring between the Tribe and the State of South Dakota. (KLJ, 2014)

As done previously with other sources of crash data, the following is an evaluation of crash data collected by tribal police according to the six FHWA/NHTSA data quality attributes.

- **Timeliness**
 - Crash data can be available in a database as soon as an investigation has concluded.
 - Some tribal governments have a supervisor review or data entry process that must be completed before their crash reports are entered into a database.
 - For Tribes that have opted to use software provided by State governments, the availability of crash reports can be delayed if a report is returned to a Tribe because it is incomplete.
 - Some Tribes do not utilize any type of crash report database.
- **Accuracy**
 - Tribes were asked about the training provided to officers on crash reporting. The majority of Tribes indicated that basic training had occurred through a police academy, on the job training, or regular trainings regarding completing the State crash form. Some Tribes have officers who have received advanced training in crash reconstruction, while several other Tribes indicated an interest in training their officers in crash reconstruction. In many cases, State law enforcement is called when a crash involving serious injury or fatalities occurs. In these cases the Tribe usually does not have a crash reconstructionist on staff to handle the investigation. The level of crash investigation training can influence the accuracy with which crash forms are completed.
 - Tribes were asked if a process was in place to evaluate the accuracy and completeness of crash data in the crash database. While 45 percent of the Tribes with police departments responded that they were uncertain on this question, another 38 percent indicated that some method was in place.
 - In addition, for the Tribes that share crash data with State governments, the crash report often undergoes additional checks for completeness and accuracy. Eighteen States indicated that a data quality process was in place for the State crash database. Most States indicated that reports submitted to their database undergo a validation check to ensure that critical fields are completed and that the coded information passes logical tests.

- **Completeness**
 - Survey responses indicated that 70 percent of the respondents with tribal police departments had a policy in place for supervisors to review crash reports to ensure all data elements were completed.
- **Consistency/Uniformity**
 - In some cases (20 percent of survey respondents) no crash report form is used and a narrative incident report is completed in the same fashion as would be done to document any other law enforcement incident.
 - Many Tribes (80 percent of survey respondents) are using a partially MMUCC compliant crash report form that is the same or similar to the crash report used by a State law enforcement agency.
- **Integration**
 - Tribes were not surveyed on integration with other data sets. It is known from the State survey responses that Tribes using electronic State crash reporting systems are able to take advantage of integration with other data sources such as driver licensing databases, vehicle records, and linear referencing systems (maps).
- **Accessibility**
 - A question was asked on the survey “Does your Tribe share crash data with the State?” In nearly equal proportions, Tribes indicated that they share no data, share all data, or share some data with a State. (42 percent do not share, 20 percent share some data, and 38 percent share all crash reports). Common barriers to crash data sharing are covered later in this report.
 - Another study conducted in 2015 found that only 25 percent of the participating Tribes shared crash data with a State agency. (Noyce, 2015)
 - Tribes that are sharing only some data indicated that crash data sharing occurs in one of two situations. The first is when a State or county road is involved. The second is when a crash appears to be a serious injury or fatal crash and an expert crash reconstructionist is needed.
 - Tribes that share all crash reports may still redact some portions of the report such as enforcement action and personal identifiers.

4. State and County Law Enforcement

State or county law enforcement are sometimes responding to crashes in tribal areas either as a routine part of their duties, because a crash occurred on a State or county roadway, or when invited by BIA or tribal law enforcement to participate in an investigation of a crash that appears to be resulting in serious injury or fatality.

All State governments have a central database where crash reports are housed. In most cases, county law enforcement follows the crash reporting procedures established by the State. All of the States that responded to survey questions about crash data collection indicated that county law enforcement reports to the statewide crash database. This report assumes that county law enforcement crash reporting is similar to the State procedures.

As done previously with other sources of crash data, the following is an evaluation of crash data collected by State and County Law Enforcement according to the six FHWA/NHTSA data quality attributes.

- **Timeliness**
 - During the survey, most States indicated there was a policy in place which sets a timeframe for the submission of crash reports but that there is no penalty for late reports. The timeframe varied from 24 hours to 30 days. The most common policy is to have crash reports submitted within 10 days of the incident.
- **Accuracy**
 - State law enforcement agencies typically have an officer trained in advanced crash reconstruction and also conduct regular refresher training on crash reporting for all officers.
 - All States responding to the survey indicated that quality assurance and quality control procedures are in place to ensure the accuracy and completeness of crash reports.
- **Completeness**
 - Many States indicated that their officers are using crash reports which require critical fields to be completed, thereby ensuring at least a minimum level of completeness.
 - In some States, reports are not recorded in the statewide database when they occur in tribal areas, but are instead treated as if the crash occurred on private property.
- **Consistency/Uniformity**
 - All States have a crash report that prompts officers to complete uniform crash criteria fields that are at least partially compliant with MMUCC.
- **Integration**
 - Although not specifically reviewed by the survey some States did volunteer information indicating that their crash reporting software is integrated with driver's licensing databases, vehicle records, or linear referencing systems (maps).
- **Accessibility**
 - Most States indicated on the survey that there was a process by which tribal governments (and other governments) could request crash data from the statewide database. In some cases, there is software available that a tribe could obtain to view crash data. In other cases, State crash data is available on a public website with personal identifiers removed. No matter the procedure, in all cases there is a process by which a Tribe could obtain crash data reported by State police for the tribal area.

In California, a P.L. 83-280 State, absent a specific contract or request, the California Highway Patrol (CHP) investigates collisions on Federal tribal lands only if the collision occurs on State or county maintained roadways within Federal territorial boundaries. Collisions occurring on State or county maintained roadways on Federal tribal lands are classified by CHP policy as reportable and subject to regular collision reporting requirements. Collisions occurring on federally maintained roadways are classified as non-reportable collisions and are not subject to regular collision reporting requirements.

When non-reportable collisions are investigated, the Primary Collision Factor is coded as Other Improper Driving unless the driver is under the influence of alcohol or drugs. A solution to this gap in collision data will soon be deployed whereby CHP Commanders will consult with each tribal government and offer to document future collisions through a formal traffic collision

report. Data generated from collisions occurring on federally maintained roadways would be collected and archived by the CHP and separated for future discretionary use. Non-reportable collision data would be stored in a CHP database and not forwarded to the Department of Motor Vehicles for administrative purposes.

Alaska is also a P.L. 83-280 State where motor vehicle crash response is a concurrent responsibility of the State. However, the vast roadway network and sparsely populated areas present challenges for law enforcement coverage by the Alaska State Troopers. A Road Safety Audit of Alaska's Elliott Highway that was conducted in 2013 identified through a public meeting that the community was aware of a fatal crash site which was not documented in the statewide crash database. It is unknown how many other motor vehicle crashes go unreported in Alaska. In addition, many Alaska Native villages face unique transportation safety issues related to winter trail, board road, marine, and ice road travel for which data collection systems do not currently exist on a statewide basis.

VII. Crash Data Collection and Sharing: Barriers and Opportunities

In the previous section there are several references to the sharing of crash data with statewide crash databases. All of the States that responded to the survey indicated that a process was available whereby tribal and BIA law enforcement could share data with the statewide database. However, as stated previously, in many cases tribal police and BIA law enforcement do not share crash reports with the State. Without high quality crash data collection and analysis, it is difficult to determine the most effective projects and programs to implement and even more difficult to acquire funding for these activities.

The Gila River Indian Community of the Gila River Reservation developed a transportation safety plan in 2014 and has established a crash data sharing process. Because crash data has been shared with the State of Arizona, Gila River's planning efforts were able to benefit from a detailed data analysis performed by Arizona DOT at no cost. The data analysis helped the Tribe determine the crash factors that should be addressed by the plan (Gila River Indian Community Department of Transportation, 2014).

Despite the benefits of crash data sharing, there are several barriers that were identified by Tribes and States which inhibit the sharing of crash data between some Tribes and States. These barriers include tribal-state communication, resources required to collect and share crash data, and Federal policy for crash reports.

A. Paperless Data Collection Options & Best Practices for Tribes

There are a variety of options for paperless reporting of crash data. Various software packages offer the ability to submit crash reports electronically from mobile or desktop computers to a central database. In many cases, these software packages may be available from a State agency under a statewide license that allows use by all law enforcement entities within a particular State at no software cost to a Tribe.

For some Tribes, electronic crash reporting may not be practical if there are a low number of crashes occurring on a small roadway network. This data is still critical to collect, but the method must be appropriately scaled for each situation. In cases where elaborate electronic

crash reporting systems are not practical, it may be possible to coordinate with a State government to complete paper crash report forms, submit them to the State, and then obtain the crash data electronically from the State at a later date. This can have the added benefit of obtaining crash information from the State database which was entered by law enforcement entities other than tribal police.

The specific solution that a Tribe should select depends on a number of factors. Tribes interested in improving crash data collection and/or sharing is encouraged to develop an action plan using the self-assessment method described in NCHRP Report 788. The action plan can then guide the process, assist in establishing communication with safety partners such as State and local governments, and be a basis for requesting funding assistance from the grant sources identified later in this report. The guide can currently be found at http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_788.pdf

Some electronic crash report collection software allows the user to perform various data analysis tasks with relative ease. Many statewide databases have these analysis capabilities built-in and the tools are often freely available to the governments who are reporting data using these electronic solutions.

Arizona is making efforts to have all law enforcement agencies send crash data electronically to the State. The State has purchased access to the TraCS software that they can share with all law enforcement agencies within the State of Arizona. The software is available to governments at no cost. Use of the TraCS Program software does require the tribal and local law enforcement to cover costs for computer hardware and staffing capacity to oversee management of the crash data collection and sharing processes before it is transferred to the State database. Although complete reports are preferred, tribal governments and local agencies can redact personal identifier information from their crash reports. To help in this effort, the Arizona DOT Traffic Records Section developed a template of the State crash report form that highlights the data elements (less personal identifiers) that represent the minimum data that a report must contain so that it can go into the State database.

Similarly, Nevada is implementing a new electronic crash reporting system known as Brazos. The State has a five-year plan to make the system available to all law enforcement agencies in the State. Tribes will be invited to use and share their data as part of the new system. The State is planning to provide all required hardware and software but will consider prioritizing those enforcement agencies that offer to purchase their own computer hardware. One Tribe has already been successfully set up in the new electronic crash reporting system. This Tribe has agreed to share all crash data with the State and has the ability to use analysis tools available in the State system.

Currently, Tribes may opt to develop their own crash report databases and not share the information with other governments. In these cases, it is still advantageous to collect MMUCC compliant crash data because the data elements that are collected ensure high quality data that can be used by the Tribe for a variety of reasons. In addition, for a complete picture of the crash history, the Tribe may need to combine its data with crash information from overlapping

jurisdictions. This is most readily accomplished when both agencies are collecting the same set of standardized data elements.

When a solution for electronic crash reporting is chosen by a Tribe, the following factors may be evaluated:

- Accessibility for combining with State and local data – both for sharing and analysis.
- Ability to query all crash data in a tabular format.
- Ability to pull individual reports at the Tribe.
- Ability to redact data elements before sharing, if desired.
- Consideration of staff time to manage database.
- Availability of training opportunities.
- Ability to record data offline if connectivity is an anticipated issue.
- Collection of standardized data elements (consider MMUCC standard).
- Diagraming capabilities for officer's in-field.
- Quality control capabilities that allow supervisor review and logical validation (for example, if rain is present and pavement cannot be dry).
- Analysis capabilities.

B. Tribe-State Communication

The most common reason provided by Tribes and States to explain why crash data is not shared is tribal sovereignty. As sovereign nations, tribal governments are not required to share crash data with State government agencies. However, many tribes have found ways to ensure tribal sovereignty is respected while still benefiting from the sharing of crash data. While tribal sovereignty allows Tribes to choose what data they are willing to share, the reasons for not sharing crash data are often more complex than asserting tribal sovereignty. Instead, several survey participants indicated that sovereign status is used to prevent sharing of crash data because of a lack of communication about how the data will be stored and used, concerns about privacy and adjudication for tribal members, and uncertainty in how the Tribe can benefit when crash data is shared.

These barriers can be addressed if Tribes and States better establish two-way communication about transportation safety and crash data improvements. These discussions can start at the staff level with tribal employees and State employees assessing the current situation and determining what future improvements would be beneficial. Then the State government employees could be invited by tribal staff to speak with leadership about their concerns and the benefits of crash data sharing.

Several Tribes who do share crash data with the State indicated that personal identifiers and citation/conviction information is redacted from crash reports before they are provided to the State. Several States identified that communication with tribal governments has resulted in modification of policies such that personal identifiers, citations, and conviction information are not shared. Other States indicated that redacted reports could be received if communication occurred identifying the barrier. The survey response from one State indicated:

“This [State agency] will accept any electronic [crash data] from any tribal agency because the information is critical to people’s well-being and safety.”

Through communication, additional concerns that Tribes may have about the sharing, storage, and use of crash data can be identified and incorporated into Memorandums of Agreement. For crash analyses that are critical to safety planners, program managers, and project engineers, it is not critical to identify individuals involved in crashes but rather to understand the factors which contribute to the occurrence of crashes.

As part of the communication with tribal leadership, it is imperative that the benefits of sharing crash data be conveyed. Some of these benefits include:

- State-provided crash data analyses to support the Tribe's safety plans, projects, and programs.
- Availability of information to support tribal grant applications.
- Enabling the State to include tribal areas in funding programs that require data-driven decisions such as the federally funded Highway Safety Improvement Program.
- Improved ability to retrieve reports when attempting to recover damages to tribal property.
- Acquiring assistance from the State in analyzing crash contributing factors and problem locations.
- More effectively identifying and addressing transportation safety issues.
- Enabling the generation of regular reports to tribal council on crash trends.
- Crash report quality control and data validation procedures established in the State reporting software and database.
- Inclusion in complex statewide analyses.

One tribal DOT in Arizona worked with the local council of governments to compare crash data available from tribal law enforcement with the statewide database. Upon realizing how incomplete the statewide database was for the reservation, the tribal DOT began conversations with tribal leadership and the State to improve the sharing of crash data collected by tribal law enforcement. As a result, the tribal DOT is now implementing several million dollars of grants (from the State-managed Federal program known as High Risk Rural Roads) in cooperation with the State DOT to address critical safety needs on the reservation with the expectation that fatal and serious crashes will be reduced significantly in coming years.

Also, strategic planning efforts for 2016, the Washington Traffic Safety Commission's Tribal Traffic Safety Advisory Board determined its number one priority was improving data in Indian Country. As a result, the Advisory Board produced a 10-minute video, *Recording Our Past, Protecting Our Future*, which encourages tribal data collection and sharing:

<http://wtsc.wa.gov/programs-priorities/tribes/> or

<https://www.youtube.com/watch?v=VDrTQNLH2-g>. Another project was the establishment of a Work Group, comprised of tribal and State representatives, to make contractual and technology changes to Washington's electronic ticketing and crash reporting system that will meet the Tribes' needs regarding sovereignty issues. Additionally, this prioritization of tribal data in Washington led to a significant expansion in the "Tribes and Target Zero" chapter of Target Zero®, Washington's Strategic Highway Safety Plan. The chapter update, led by tribal representatives, has one of Target Zero's more complex data schemas. (FHWA, 2016)

In addition, Tribe-State communication in Wisconsin has been effective at changing the way in which Tribes are asked to share data with the State. Tribes now provide crash data to a third party, the University of Wisconsin. The university purges personal identifiers from the crash data before sending it to the statewide database. This provides additional separation between the raw crash data and the statewide databases. This additional separation adds assurance that State agencies cannot use the personal identifiers contained within the raw crash data in a negative way.

States are now required to collect and submit performance measure information to FHWA on: number of motor vehicle crash-related serious injuries and fatalities; and serious injuries and fatalities per vehicle miles traveled (VMT); and number of fatalities serious and injuries of non-motorized users. A final rule was published in the Federal Register on March 15, 2016, that requires States to establish and report on annual targets for each performance measure. States that do not meet or make significant progress toward meeting their targets must develop an implementation plan and must use a specified amount of HSIP funding only for HSIP projects. The rule also requires all States to report serious injuries using a single, national definition and coding convention: “Suspected Serious Injury (A)” as defined in the MMUCC 4th Edition. The key to States establishing safety performance targets is for stakeholders to work together to share data, review strategies and understand outcomes. States are encouraged to communicate with BIA and Tribes regarding efforts to improve the collection and reporting of fatality and serious injury data as well as efforts to improve data sharing. By working with BIA and Tribes, State DOTs can include BIA and tribal efforts in their considerations when establishing data-driven safety performance targets. The FHWA will work with State governments so they collaborate with BIA and Tribes and consider the impact of data that was not previously recorded in FARS and statewide data systems when establishing performance targets.

USDOT action will also be taken to encourage State governments to initiate or continue discussions with tribal governments concerning crash data sharing. The Traffic Records Coordinating Committees (TRCCs) are the NHTSA-led teams review State safety data on a regular basis (usually every 5 years or as requested by States). These reviews follow the Procedures Manual for State Traffic Records Assessments which contains 391 questions used to evaluate the safety databases of a State government. The manual does not contain any information about tribal governments and does not include assessment of tribal records (NHTSA, October 2015). The manual does mention local governments and individual States may have included Tribes in their assessment following the sections of the manual about local governments.

While Tribes are sovereign nations and public authorities they are not local governments. The Procedures Manual for State Traffic Records Assessments is expected to be updated in 2017 and the NHTSA will add consideration for tribal governments including evaluation of communication between the State and Tribal governments concerning traffic records.

C. Tribal Law Enforcement

Tribal law enforcement is encouraged to collect crash data using a crash report form with uniform crash criteria based on the MMUCC standard. In addition, Tribal law enforcement is

encouraged to share crash data with State crash databases directly or via a national clearinghouse, if established.

Because Tribes are sovereign nations and not sub-units of State governments, some Tribes may reject sharing crash data, even if personal identifiers are redacted, with State governments. When discussing traffic records improvements, FHWA and BIA OJS could discuss establishment of a national crash data clearinghouse which would give Tribes the option of reporting crash data to the clearinghouse in lieu of reporting to State crash databases. Similar to the arrangement in Wisconsin (see previous section), any crashes submitted to this national clearinghouse would be shared on a regular basis with State governments and FARS after personal identifiers and citation information were removed.

D. Resources for Crash Data Collection and Sharing

Once a tribal government has made the decision to share crash data, additional challenges may need to be addressed. These may include:

- Cost of software and hardware to collect electronic crash data.
- Cost of hiring staff to oversee crash data collection, management, and sharing.
- Inconsistency in crash report forms among tribal, county and State law enforcement.

There are several funding sources where Tribes may obtain the necessary equipment, software, and staff to collect and share crash data. Funding opportunities for crash data improvements are addressed later in this report. In addition, many States indicated that they would provide software and, in some cases, hardware to Tribes in support of crash data collection.

The MMUCC standard for crash data collection is described later in this report. Tribes are encouraged to review this standard when revising their police crash report forms and to consider the data elements being collected by enforcement agencies with overlapping jurisdiction. Developing a crash form that contains the MMUCC elements will help to facilitate safety analyses by planners and engineers as well as crash data sharing.

One State provided this anecdotal information: *“Unfortunately, tribal law enforcement may be using crash report forms that are not consistent with the State crash report form and they may often provide data in narrative format versus a codified format. Due to the time required to decipher/transfer that type of data into the database, not to mention the potential for error in transferring the information, the State may not be able to accept certain reports.”*

E. BIA Crash Data Sharing

The crash data collected by and shared with State governments is critical to effective management of Federal funding programs which could benefit tribal areas. Many comments were received from States about the difficulty of obtaining crash data from DOI. The DOI-10 Privacy Act Statement for IMARS does allow sharing of crash data for “routine use” or under a FOIA request as long as personal identifiers are removed. However, even when “routine use agreements” have been established it can be very difficult to obtain the crash reports from BIA Law enforcement offices mainly due to staff availability to produce the reports. The survey received numerous statements from States and Tribes demonstrating that the lack of crash data

sharing from BIA Law Enforcement has been detrimental to Federal, State, and Tribal transportation safety programs. The following are direct quotes from the survey (redacted for privacy):

- From a State DOT: *We have been unsuccessful in getting ... crash data that is managed and documented by the BIA. . . . For [one Tribe the State DOT] has requested [BIA] crash data to assist in support of seeking a traffic signal warrant ... The Tribe has been unable to provide tribal crash data to [the State DOT].*
- From a State DOT: *[Tribes] want to do this [share crash data] but have been limited by the BIA.*
- From a tribal DOT: *Our local [BIA] office, for example, is very short-staffed, so even though we have this [routine use agreement] in place, it is sometimes hard to get printed copies of reports in a timely manner.*
- From a tribal DOT: *Tribe does not have access to any crash data gathered by BIA Law Enforcement Services.*
- From a tribal DOT: *BIA crash data should include the same information as the [State] system does, and redacted data should be exported to other agencies on a monthly basis.*
- From a State governor's highway safety office: *A huge sore point for FARS analysts is the low level to zero cooperation we receive from the FBI, BIA officers, and national park rangers. FARS is owned by a Federal agency and, it's infuriating that Federal law enforcement agencies refuse to give us crash reports. FARS analysts have to submit FOIA requests and eventually received heavily redacted reports.*

For Tribes that have crash data collected by BIA Law Enforcement Services, the barriers to crash data accessibility are different than with tribal police departments. Communication is encouraged between BIA Law Enforcement Services, affected Tribes, and the State to arrange crash data sharing. In some cases the BIA, Office of Justice Services, Operations Directorate may need to be involved to assist with arranging crash data sharing agreements.

A few barriers to crash data sharing were identified which may be resolved through clarifications of existing policy or BIA Office of Justice Services policy changes. The issues identified were information technology policies at DOI, inconsistent crash reporting policy, variations in interpretation of the Privacy Act, and staffing levels.

One barrier to the sharing of BIA crash data is the use of only narrative reports to collect crash information instead of using a crash report form with uniform crash criteria recorded for each crash. When crash data is received by States from the DOI, it is often in this narrative format and may not include enough information to be entered into the State database.

The information technology (IT) barriers primarily pertain to the use of State crash data collection software on Federal Government computers. Current BIA IT policy prevents the use of State crash reporting software on Federal Government computers. Use of State crash reporting software can have many benefits for database integration, crash data sharing, and safety data analysis.

Another identified barrier is that the interpretation of the Privacy Act requirements seems to differ from one BIA Law Enforcement Agency office to the next. In some cases, Tribes and States reported that BIA Law Enforcement has interpreted current policy to mean that they may not share crash data with tribal governments for planning purposes. In other cases, including the interpretation of the Operations Directorate at BIA-OJS, routine use agreements can be established between the BIA and Tribes or States. These agreements enable the sharing of crash data without personally identifying information on a regular basis. The collection of crash data on a standard crash form, such as the DOI crash form or State crash reporting software, would enable BIA-OJS to more readily provide the desired crash data and more quickly redact personal identifiers.

Finally, staffing levels at many BIA Law Enforcement Services offices are low. The retrieval of crash reports may not be a priority for staff because of the multitude of other issues that law enforcement must address on a daily basis. Here again, use of State or DOI crash forms could enable staff at a State or central DOI office to address all crash data requests.

F. Tribal Transportation Safety Grants

The FHWA Tribal Transportation Program Safety Funds, available for federally recognized tribal governments to improve transportation safety, will continue to accept applications based on any form of safety data. However, applicants using data other than police crash reports will now be encouraged to provide a plan showing how the applicant will achieve higher quality data for the future. The process described in National Cooperative Highway Research Program (NCHRP) 788 is one method Tribes could use to assess traffic records. Other options for assessing traffic records may be available by contacting the appropriate NHTSA region.

In 2001, a series of traffic records assessments were conducted at four reservations by the NHTSA Technical Assessment Team using a procedure similar to that used when assessing State traffic records. Each of those assessments produced a document that the Tribe could use to work toward higher quality safety data sets.

VIII. Uses of crash data

In general, complete and accurate data are needed to raise awareness about the magnitude of road traffic injuries, and to convince policy makers to support interventions that effectively address the highest priority needs for action. Reliable and accurate data are also needed to correctly identify problems, risk factors, and priority areas, and to formulate strategy, set targets, and monitor performance. Ongoing, data-led diagnosis and management of the leading road traffic injury problems enables appropriate action and resource allocation. Without complete data on where crashes are occurring and the factors contributing to the crash causation, we cannot be sure that investments to improve roadway engineering, enforcement, emergency medical services, and driver education are being applied where they will have the greatest impact. Without being able to analyze the causes of crashes, we cannot be sure that well-intended improvements in policy or public education programs will actually address the root of the problem. In other words, without better use of data, there will be no significant sustainable reductions in exposure to crash risk or in the severity of crashes.

Data relevant to road safety are collected every day in most countries, but for this data to be useful for informing road safety practices, it must be properly coded, processed, and analyzed in a computerized database system. (World Health Organization, 2010) In addition, there is a need for more capacity-building for data collection, data sharing, and data analysis at the tribal and local (county) level. In fact, the highest-quality crash data is typically found at the local level. Since this is the site of the original crash location and typically a local investigator takes the report, firsthand knowledge of the crash area and details are known and familiarity with the circumstances improves the ability to provide valuable intervention strategies. However, the agency that provides emergency response or does law enforcement may not be well connected with the agency with primary responsibility for improving the roads. In that case, there will be a gap between collecting the data and responding to it.

The information flow may not be working if another government is the emergency responder, or even between units inside a government. Tribes should seek to improve their access to crash data and improve and use the databases maintained by their departments and departments of the State(s) where they are located prior to seeking information from national databases as this firsthand knowledge provides for a more accurate evaluation of the problem. It also provides the autonomy to institute policies and programs at the grass roots level which allows any actions taken to be culturally and situationally appropriate and tested locally. The national databases are necessary but should be more useful in national-level studies and policymaking than for safety analysis by any one Tribe.

An illustration comes from a survey response from a Tribe in Arizona. It affirms the value of good data analysis for cost-effective interventions, but also points to the need for staff training and support:

“[The Tribe] in the past has not used crash data in this manner, because road maintenance was the responsibility of the BIA. [The Tribe], through the Office of Grants and Contracts (A 638 Program), has now developed a Strategic Safety Plan (SSP) and integrated the SSP in the [Long Range Transportation Plan] () Plan and update. We understand the importance of not just collecting crash data, but analyzing that data and

targeting crash reduction strategies. Doing all of these things costs money and time. Staffing and knowledge in these areas needs to be developed within all tribal governments and the appropriate funding levels to accomplish these goals needs to be made available.”

Road safety related data are used by a variety of stakeholders –law enforcement, transportation departments, health facilities, and insurance companies – as well as policymakers and transportation planners. Reliable data can be important in making traffic injuries a priority issue. This data can also be used to make the general public more aware of changes in behavior that will improve their safety. Road traffic crash data are crucial to identifying risks, developing strategies and interventions to address those risks, and evaluating the impact of interventions.

Analysis of complete and accurate crash data is extremely effective in providing strategies for the reduction of needless roadway crash fatalities and injuries. The following “data use” categories provide a summary but are not to be considered totally comprehensive.

A. Enforcement / Adjudication / Legislation

1. Adjudication & Insurance Companies

The most obvious use of crash reports is for adjudication for parties involved in an individual incident. Police, courts, insurance companies, and the involved parties all depend on an accurate account of the event in a police crash report.

2. Targeting Law Enforcement Strategies

Some law enforcement agencies conduct regular review of crash data. These reviews enable a focus of efforts in traffic safety enforcement to address any trending problems (i.e., speeding, drinking and driving, driver distraction, and seat belt usage) and to locate enforcement activities in the needed areas.

3. Legislation

Data is needed that can identify the causes and magnitude of road traffic crashes and assist in prioritizing remedial action. This is particularly relevant in relation to risk factors that can be reduced by legislation and its enforcement (i.e. distracted driving, impaired driving, speeding, motorcycle helmet usage, seat belts, and child restraint usage).

B. Funding and Resource Allocation

1. Safety Planning and Allocation of Resources

Crash data can be used to identify trends in the factors involved in transportation crashes. Many State and Tribal governments have used this information to develop transportation safety plans. These plans help to forge partnerships between departments and focus on common goals. At the time of this writing, the FHWA has provided funding through the Tribal Transportation Program Safety Fund to over 50 percent of federally recognized Tribes to develop safety plans and has published a toolkit to assist tribes in the development of safety plans at <https://flh.fhwa.dot.gov/programs/ttp/safety/stsp-toolkit.htm>.

Also, some governments develop partnerships between departments where a regular report on transportation safety trends is developed and distributed for leadership review and action. These transportation safety reports are commonly distributed to leadership, law enforcement, transportation, and injury prevention departments. Often these reports must aggregate data for three to five years to avoid over-emphasis on a topic based on the occurrence of a single event.

2. Grant Applications

Most transportation safety funding opportunities offered by Federal and State governments to tribal governments and local public agencies require crash data to justify any funding request. The typical information required for an infrastructure improvement project is site-specific crash data detailing the types of collisions that have occurred at the site and any contributing factors that can be derived from the police crash reports. Applications for behavior modification projects (law enforcement, education, and etc.) need to show trends in crash data contributing factors from year-to-year. These data needs are easily fulfilled when all of the crash data is in one uniform format or database. However, these data needs become complex quickly when multiple databases are used by various law enforcement agencies.

In many cases, the required crash data is found in police reports which are available in a statewide database. One notable exception is the TTP Safety Fund which encourages eligible applicants to justify their funding requests using the best available data, to include first responder call logs or citizen testimony about past incidents.

C. Promotion and Coordination

1. Communication with Leadership

A well-functioning safety management system will involve regular updates on transportation safety trends. Such reports are typically aligned with a transportation safety plan to track performance measures that are identified by the plan. These leadership reports also establish some accountability among the various departments that are charged with implementation of a transportation safety plan.

2. Communication with other Governments

Adequate crash data in a useable database also allows communication among all stakeholders. The first way that this communication occurs is when statewide assessments of crash data are conducted in support of data-driven safety programs such as the Highway Safety Improvement Program and the NHTSA programs. These assessments identify high-risk locations and trends in comparison with all other areas in a State. When crash data is collected by tribal or BIA Law Enforcement and not shared with the State, the result is that the tribal governments are at a disadvantage for statewide assessments.

The second form of communication that can occur with good crash data is the development of data-driven transportation safety plans by tribal governments. These plans establish a means of communication with State and local governments about the priorities of the tribal government. This written form of communication by the Tribe establishes a need that is adequately documented based on crash data and can now be considered by State and local governments as

they program resources. The FHWA strongly encourages tribal governments to develop transportation safety plans. Funding and a toolkit for developing safety plans are available through the Tribal Transportation Program in the FHWA Office of Federal Lands Highway (FLH).

3. Public Advocacy Campaigns

An aware and informed public can better request responses from the appropriate government entity. Advocacy campaigns can also influence widespread beliefs and attitudes that affect people's behavior on the road. For example, data collected from Minnesota about key roadway safety risks on reservations indicates that front-line law enforcement officers are extremely concerned about texting and other cell phone use by drivers, which suggests this, is a priority for public advocacy in the area (Narváez & Quick, 2016). Advocacy and awareness campaigns can address public misconceptions, such as the belief that it is less important to use seat-belts when travelling in rear seats in cars. Campaigns that accompany the introduction of new laws and policies can enhance their effectiveness.

D. Research and Development

1. TRB Subcommittee on Tribal Transportation

One of the many institutions that use crash data to conduct research is the Transportation Research Board (TRB). As with any research, the quality of available data influences the quality of the end product. The TRB committee on tribal transportation is aware of several research topics that will be proposed for 2017 including:

- Accuracy and completeness of race data in FARS.
- Effectiveness of driver education tribal communities.
- Human factors and tribal transportation safety.
- Traffic codes in tribal areas.

2. Vehicle Safety Standards

Federal Motor Vehicle Safety Standards set minimum performance requirements for those parts of the vehicle that most affect its safe operation (brakes, tires, and lighting) or that protect drivers and passengers from death or serious injury in the event of a crash (air bags, safety belts, child restraints, energy absorbing steering columns, and motorcycle helmets). These Federal standards are applicable to all vehicles and vehicle-related equipment manufactured or imported for sale in the United States (including U.S. territories) and certified for use on public roads and highways (NHTSA, 2011).

3. Roadway Design and Traffic Engineering

Crash data can help to identify hazardous routes and road design problems. When partnered with the use of a GIS, crash data analysis can be especially effective in achieving visible, short term results. Network screening and the systemic safety approach are two examples of crash data analyses that require the availability of crash data (FHWA, 2014).

Crash data is also used by engineers when designing or evaluating a specific section of roadway. Crash reports can help the engineer understand how drivers are interacting with the roadway. Crash data may also play a role in determining if a roadway design will vary from standards.

4. Driver Training and Testing

Many driver training programs have begun or are being enhanced following the review of crash data. These reviews can uncover trends which can assist in enhancing training and testing for not only the general population of drivers but also can target specific groups of drivers.

E. Safety Improvement with Limited Crash Data

Safety measures can be implemented without the availability of formal crash data. However, the effectiveness of safety decision-making processes is greatly enhanced when crash data is available and is considered. Several methods that have been used to identify safety improvements when crash data is inadequate or unavailable are summarized in this section. When Tribes submit grant applications for safety improvements, it may be beneficial to demonstrate to the funding agency that efforts are underway to improve crash data in the future.

1. Road Safety Audits

A Road Safety Audit (RSA) is the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users. The FHWA works with State and local jurisdictions and tribal governments to integrate RSAs into the project development process for new roads and intersections, and also encourages RSAs on existing roads and intersections.

2. Systemic Safety Improvement

The systemic approach to safety involves widely implemented improvements based on high-risk roadway features correlated with specific severe crash types. The approach provides a more comprehensive method for safety planning and implementation that supplements and compliments traditional site analysis. It helps agencies broaden their traffic safety efforts and consider risk as well as crash history when identifying where to make low cost safety improvements.

While the systemic approach is most effective when implemented with good crash data, it is possible to infer high-risk roadway features based on the experience in nearby jurisdictions that do have adequate crash data.

3. Other Sources of Crash Data

In its simplest form, a surrogate for crash data is the concept that a substitution for lack of actual crash data can be made to assist with an analysis of possible crash causes. Some suggest that these alternative data sources can also provide insights when good quality crash data is available (Jovanis, 2011). Crash data surrogates are a way to assess a situation to give another perspective on the problem at hand but it should not be used as the primary means of analysis over actual crash data, when it is available.

The lack of crash data in a tribal area should not prevent a Tribe from beginning safety planning. Safety plans that are developed in the absence of formal incident data should include an assessment of the available data and actions that will lead to improved data availability. As previously identified, one option for Tribes to conduct crash data assessment is by using the

process described in NCHRP Report 788: Guide for Effective Tribal Crash Reporting. Some Tribes have successfully started safety plan development using alternative sources of data.

Alternative data sources can provide new views into the problem. It was mentioned above that road safety related data are used by a variety of stakeholders –law enforcement, transportation departments, health facilities, and insurance companies – as well as policymakers and practitioners. Conversely, these stakeholders are also often invaluable, highly informed sources of new kinds of data that may reveal important safety risks that do not turn up in traditional crash reports. For example, the TTAP Circuit Safety Riders and injury prevention coordinators have information about safety restraint usage. Finally, brief social science surveys of residents at major community events can provide information about key areas of concern for pedestrians, children, and other vulnerable populations. The additional kinds of data mentioned above are robust and compelling, provided they are carefully collected (Narváez & Quick, 2016).

The University of Wyoming’s Local Technical Assistance Program has developed a method for assessing roadway risk by evaluating the roadway features where crash data may be limited. The method has been deployed with several counties in Wyoming and at the Wind River Indian Reservation. This five-step process involves analyzing any data that is available, conducting field assessments of roadways, determining risks, countermeasure identification, and benefit-cost analysis. This process allowed recommendations for safety improvements on roadways where crash data was not available by inferring that the risks found on similar county roadways where data was available (Shinstine D. , 2014).

Another Tribe used traffic citations to determine some of the most common behavioral risks (speeding, DUI, driving without a license). The Tribe now focuses its efforts in those areas until better data is available. This Tribe is also conducting an observational seat belt study and has plans to conduct a qualitative roadway safety study.

Other Tribes indicated that they have utilized citizen’s reports or surveys as well as the observations of staff such as maintenance and transit drivers to help inform the Tribe’s safety planning efforts. In some cases information on crashes was collected from the public and staff by asking them to mark locations of risks and undocumented crashes using large maps.

Some efforts have been made to use injury data collected by hospitals and clinics or the Indian Health Service to inform decision making related to transportation safety (Ragland, 2016). If this is the best available data or if the data is linked with crash reports, there is potential benefit of using this data. There is some concern over the validity of hospital/clinic data since it is self-reported by the injured party. An individual may claim their injury was caused by a vehicle crash to avoid legal ramifications of the actual event which caused the injury. Also, injury data typically does not record much information about the location or factors contributing to a crash.

Where crash reports are scarce, some Tribes have successfully acquired grant funding using records from the Emergency Medical Services (EMS) provider. While EMS reports would help to document where crashes occur, they are unlikely to record contributing factors information since the EMS personnel must focus on treating the injured parties instead of determining the reasons why a crash occurred. The EMS personnel could make injured parties aware of the self-

reporting requirements established by State governments although these duties would not be high on their priority list. In some States, it may be possible for EMS personnel to file the State report that is intended for parties involved in a crash where law enforcement does not respond. High quality crash records would establish a relationship between crash reports and EMS or injury reports. Further research could investigate the possibility of using injury data, especially the reports completed by EMS personnel, to provide more complete data coverage for injuries and fatalities caused by motor vehicle crashes in tribal and rural areas.

IX. Funding for Improving Crash Data Collection

Several funding programs are available from which Tribes may obtain funding to implement improved electronic crash data systems. These budgetary resources are available from the DOT, the DOI, and the DOJ.

A. TTP and TTP Safety Fund (23 U.S.C 202(e))

The Tribal Transportation Program is a formula-driven program that is available to federally recognized Tribes to assist in the construction, operation, and maintenance of facilities that have been accepted into the National Tribal Transportation Facility Inventory (NTTFI). Eligible activities for expenditure of TTP funds include all items eligible for the TTP Safety Funds (TTPSF) and more.

Each year under the FAST Act, 2 percent of the available TTP funds are set aside to address transportation safety issues through a competitive, discretionary grant program. Awarded annually, projects are chosen where outcomes will address the prevention and reduction of death or serious injuries in transportation related crashes. The TTP Safety Fund recognizes that traffic fatalities and injuries severely impact the quality of life in tribal areas. Statistics are consistently higher than the rest of the nation as a whole; they advocate the development of Strategic Transportation Safety Plans as a means for Tribes to determine how transportation safety needs will be addressed in tribal communities.

It is the policy of the TTPSF that crash data improvements result in a system that allows the sharing of information on fatal crashes for the purposes of inclusion in the FARS, but these projects are only encouraged to share lesser severity crashes (FHWA-FLH).

Projects eligible for the TTP Safety Fund are safety planning, infrastructure improvements, and safety data improvement projects as described in 23 U.S.C. 148(a)(4). Additional information about the TTPSF can be found at <https://flh.fhwa.dot.gov/programs/ttp/safety/ttspf.htm>.

B. HSIP (23 U.S.C 148)

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), which was signed into law on August 10, 2005, (Public Law 109-59) established the HSIP as a core Federal-aid program administered by State DOTs. The overall purpose of this program is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads through the implementation of infrastructure-related highway safety improvements. The SAFETEA-LU established extensive new resources and opportunities to

advance highway safety throughout the country in a comprehensive, strategic manner. The HSIP has continued with some modifications through MAP-21 and the FAST Act. Core requirements for the HSIP are that projects be data driven and consistent with the State's Strategic Highway Safety Plan (SHSP) which is to be developed in partnership with State, tribal, and local entities. The requirements for the HSIP are codified in 23 U.S.C 148. Crash data improvements are an eligible item under 23 U.S.C 148.

C. BIA Indian Highway Safety Program (23 U.S.C 402)

The Highway Safety Act of 1966, 23 USC 402, provides USDOT funding to assist federally recognized Tribes with implementation of traffic safety projects, including crash data improvement, in tribal areas of the United States. The program is administered by the BIA Indian Highway Safety Program (IHSP) under an agreement with NHTSA.

D. State Administered NHTSA Highway Safety Plan Funding (23 USC 402 and 405(c))

The State Highway Safety Program, commonly referred to as Section 402, was initially authorized by the Highway Safety Act of 1966 and has been reauthorized and amended a number of times, including most recently under the FAST Act.

Section 402 supports State highway safety programs, designed to reduce traffic crashes and resulting deaths, injuries, and property damage. Section 405(c) supports the development and implementation of effective State programs that evaluate or improve safety data quality. A State may use these grant funds only for highway safety purposes; at least 40 percent of these funds are to be used by or for the benefit of tribal governments and political subdivisions of the State to address local traffic safety problems. States are required to provide a 20 percent match for this funding. The program is administered by NHTSA at the Federal level and by the State highway safety offices at the State level. Crash data improvements are eligible under 23 U.S.C 402 and 405(c).

E. DOJ Coordinated Tribal Assistance Solicitation (CTAS)

Through the CTAS, federally recognized Tribes and tribal consortia are able to submit a single application for most of DOJ's tribal grant programs. The DOJ designed this comprehensive approach to save time and resources and allow Tribes and DOJ to gain a better understanding of the Tribes' overall public safety needs. The first coordinated tribal grant process was launched in FY 2010, through the collaborative efforts across many department components, bureaus, and offices. Tribal police could propose a CTAS project intended to improve records management systems, including electronic crash data reporting. Additional information can currently be found at <http://cops.usdoj.gov/Default.asp?Item=2489>

X. Methodology

This report was developed by FHWA's, FLH office. The Tribal Transportation Safety Management System Steering Committee (SMS Steering Committee) assisted in the development and distribution of a survey to support this project. The SMS Steering Committee was further involved in review and compilation of the final report. The SMS Steering Committee consists of representatives from four Tribes (Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation; the Zuni Tribe of the Zuni Reservation; the Karuk Tribe; and the Cherokee Nation); a consortium of Tribes (the Association of Village Council Presidents); BIA Division of Transportation; FHWA-FLH; FHWA, Office of Safety; FHWA Resource Center; BIA Office of Justice Services Indian Highway Safety Program, Centers for Disease Control, Indian Health Service; NHTSA; BIA Indian Highway Safety Program; and, Tribal Technical Assistance Centers. Although not a member of the SMS Steering Committee, the DOJ's Office of Tribal Justice was also involved in the development and review of this report.

The OMB approval was obtained to conduct the survey under the Paperwork Reduction Act document control number 2125-0649. Tribal and State government officials were asked to respond to a set of survey questions asking about their crash data collection, sharing, and use. The survey was made available through a web-based form, an email questionnaire, and by inviting tribes to call FHWA's TTP. Responses were received that represented 152 tribal governments and were primarily from tribal police, BIA Law Enforcement, and tribal departments of transportation. Also, 22 State governments responded to the survey. In addition, interviews were conducted with BIA-OJS Operations Directorate, the Federal Bureau of Investigation, and State government officials.

All questions were optional so the total number of Tribes or States responding to any given survey question does fluctuate where the results are documented throughout this report. Although the surveys and interviews are the primary source of information for this report the authors also reviewed existing literature about tribal governments and crash data. Limited research has been conducted pertaining to crash records available to tribal governments on a national scale. However, some statewide studies have broached the topic.

XI. Works Cited

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