



Building Tribal Traffic Safety Capacity

Final Report 592

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16. Abstract Nationally, the annual motor vehicle crash (MVC) mortality rates for American Indians per 100,000 persons have been three to four times greater than the general public. This trend has also been consistently evident in Arizona. The annual MVC mortality rates for American Indians in Arizona per 100,000 persons have been three times higher than the statewide population. The project purpose was to identify methods for assisting tribes to develop capacity in five areas: 1) Decision Making; 2) Data Collection, Storage, Maintenance, and Integration with Other Programs; 3) Equipment and Software; 4) Project Prioritization; and 5) Project Development, Implementation, and Evaluation. The approach used to conduct the research was described in the Tribal Highway Safety Improvement Program Model and Guidelines. ^[21] The four-task model and nine policy and technical guidelines were developed in 2004 by the research team from the Inter Tribal Council of Arizona, Inc. (ITCA) as a planning resource for tribes and the Federal Highway Administration (FHWA) to consider when establishing a Tribal Highway Safety Improvement Program (THSIP) or eliminating roadway hazards on tribal lands.					
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SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS				APPROXIMATE CONVERSIONS FROM SI UNITS			
Symbol	When You Know	Multiply By	To Find	Symbol	When You Know	Multiply By	To Find
<u>LENGTH</u>							
in	inches	25.4	millimeters	mm	millimeters	0.039	inches
ft	feet	0.305	meters	m	meters	3.28	feet
yd	yards	0.914	meters	m	meters	1.09	yards
mi	miles	1.61	kilometers	km	kilometers	0.621	miles
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yd ²	square yards	0.836	square meters	m ²	Square meters	1.195	square yards
ac	acres	0.405	hectares	ha	hectares	2.47	acres
mi ²	square miles	2.59	square kilometers	km ²	Square kilometers	0.386	square miles
<u>VOLUME</u>							
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gal	gallons	3.785	liters	L	liters	0.264	gallons
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yd ³	cubic yards	0.765	cubic meters	m ³	Cubic meters	1.308	cubic yards
NOTE: Volumes greater than 1000L shall be shown in m ³ .							
<u>MASS</u>							
oz	ounces	28.35	grams	g	grams	0.035	ounces
lb	pounds	0.454	kilograms	kg	kilograms	2.205	pounds
T	short tons (2000lb)	0.907	megagrams (or "metric ton")	mg (or "t")	megagrams (or "metric ton")	1.102	short tons (2000lb)
<u>TEMPERATURE (exact)</u>							
°F	Fahrenheit temperature	5(F-32)/9 or (F-32)/1.8	Celsius temperature	°C	Celsius temperature	1.8C + 32	Fahrenheit temperature
<u>ILLUMINATION</u>							
fc	foot candles	10.76	lux	lx	lux	0.0929	foot-candles
fl	foot-Lamberts	3.426	candela/m ²	cd/m ²	candela/m ²	0.2919	foot-Lamberts
<u>FORCE AND PRESSURE OR STRESS</u>							
lbf	poundforce	4.45	newtons	N	newtons	0.225	poundforce
lbf/in ²	poundforce per square inch	6.89	kilopascals	kPa	kilopascals	0.145	poundforce per square inch

SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	3
1.1 BACKGROUND	3
1.2 PROJECT OVERVIEW	4
1.3 PROJECT SCOPE	8
1.4 ORGANIZATION OF REPORT CONTENTS	8
2.0 PROJECT INITIATION	9
2.1 SELECTION OF TRIBES TO PARTICIPATE IN THE DEMONSTRATION PROJECT	9
2.1.1 Develop Selection Criteria	9
2.1.2 Identify Potential Tribal Governments to Participate in Project	12
2.1.3 Select Tribal Governments to Participate in Project	12
2.1.4 Prepare Participation Proposal and Presentation	13
2.1.5 Participation Proposal Presented to Selected Tribal Governments	14
2.1.6 Letters of Agreement Prepared for Participating Tribes	14
2.2 IDENTIFICATION OF POTENTIAL TRAFFIC SAFETY FUNDING SOURCES AND DEVELOPMENT OF A TRIBAL HIGHWAY SAFETY FUNDING GUIDE	15
3.0 IMPLEMENT THE MODEL PROCESS FOR A TRIBAL HIGHWAY SAFETY IMPROVEMENT PROGRAM	16
3.1 DETERMINE IF A TRIBAL GOVERNMENT HAS A HIGHWAY SAFETY PROBLEM	17
3.1.1 Establish a Tribal Traffic Safety Coordinating Team	17
3.1.2 Select Tribal Coordinating Team Leader	18
3.1.3 Define Coordinating Team Responsibilities	19
3.1.4 Brainstorm Tribal Highway Safety Issues	20
3.1.5 Traffic Safety Data Availability	24
3.1.6 Gather and Analyze Available Data	27
3.1.7 Using Data to Assess the Magnitude of the Problem Associated with Each Tribal Highway Safety Issue	31
3.1.8 Potential Safety Funding Sources to Address Identified Traffic Safety Issues	33
3.1.9 Summary of Coordinating Team Activities for Determining if the Tribal Government has a Highway Safety Problem Modified the Matrix	39
3.2 SELECT FUNDING SOURCES TO ADDRESS HIGHWAY SAFETY ISSUES	40
3.2.1 Investigate Potential Funding	40
3.2.2 Determine Tribal Actions Necessary to Obtain Safety Funds	41
3.2.3 Prepare Funding Recommendations	42
3.2.4 Decisions on Tribal Coordinating Team Recommendations	43
3.3 PLAN FOR A THSIP OR SAFETY PROJECT	44
3.3.1 Prepare Scope-of-work for Development of THSIP or Safety Project	44
3.3.2 Identify Tribal Traffic Safety Capacity Issues	44
3.3.3 Identify Methods to Build Tribal Traffic Safety Capacity	50

3.3.4	Develop Plan for Tribal Traffic Safety Capacity to Support the THSIP or Safety Project	50
3.3.5	Solicit Funding for Developing THSIP and Implementing Tribal Traffic Safety Capacity	51
3.3.6	Develop a Plan for the THSIP or Safety Project.....	51
3.3.7	Obtain Tribal Administrative Approval for Implementing the THSIP or Project	54
3.3.8	Establish an Implementation Team.....	56
3.4	DEVELOP TRIBAL TRAFFIC SAFETY CAPACITY TO IMPLEMENT A THSIP OR SAFETY PROJECT	56
3.4.1	Develop Tribal Traffic Safety Capacity and Secure THSIP or Project Funding	56
3.4.2	Implement and Evaluate the THSIP or Safety Project According to the Plan.....	57
4.0	DEVELOP METHOD RECOMMENDATIONS FOR TRIBAL TRAFFIC SAFETY CAPACITY TO BE CONSIDERED DURING THSIP IMPLEMENTATION	59
4.1	INTRODUCTION	59
4.2	USING THE GUIDE	60
5.0	MODIFY TRIBAL TRAFFIC SAFETY MODEL AND GUIDELINES	73
6.0	CONCLUSIONS AND RECOMMENDATIONS	91
6.1	CONCLUSIONS.....	91
6.2	RECOMMENDATIONS	92
	APPENDICES	93
	Appendix 1 – SPR 592 Building Tribal Traffic Safety Capacity Work Plan	94
	Appendix 2 – Matrix of Program Uses and Application Deadlines	102
	Appendix 3 - Activity Checklist	107
	Appendix 4 - Traffic Records Data Survey	110
	Appendix 5 - Arizona Traffic Accident Report Form	113
	REFERENCES	117

LIST OF TABLES

Table 1	Summary of the Tribal Traffic Safety Model and Guidelines	7
Table 2	Tribal Selection Process Questions.....	11
Table 3	Transportation Capacity Attributes of Tribes Selected to Participate in the SPR 592 Project.....	13
Table 4	Potential Internal and External Partners for BTTSC	16
Table 5	Format for the Identification and Analysis of Tribal Traffic Safety Issues.....	20
Table 6	Tribal Traffic Safety Issues and Actions Identified through the Tribal Coordinating Team Brainstorming	21
Table 7	Records Data Availability.....	25
Table 8	Traffic Safety Issue Findings from the MVC Reports for the Three Participating Tribes.....	32
Table 9	Potential Tribal Traffic Safety Program Funding Sources for Tribal Projects	34
Table 10	Potential Tribal Traffic Safety Program Funding Sources for Each Safety Issue or Action	35
Table 11	Team Activities Regarding Safety Issues, Infrastructure and Funding	39
Table 12	Tribal Traffic Safety Capacity Issues	46
Table 13	Methods that Can Assist Tribes to Build Traffic Safety Capacity.....	61
Table 14	Model Process Analysis and Recommendations	74
Table 15	Model Guidelines Analysis and Recommendations	80

LIST OF FIGURES

Figure 1	MVC Death Rates for AZ and United States for All Races and for American Indians/Alaska Natives from 1999 through 2004.....	3
Figure 2	MVC mortality rates for American Indians/Alaska Natives and all races in AZ, 1980, 1990, 1995-2005.....	4
Figure 3	American Indian Reservations and Transportation District Boundaries	5

LIST OF ACRONYMS

ADHS	Arizona Department of Health Services
ADOT	Arizona Department of Transportation
ALISS	Accident Location Identification Surveillance System
ATAR	Arizona Traffic Accident Report
ATRC	Arizona Transportation Research Center
AZ	Arizona
BIA	Bureau of Indian Affairs
BIADOT	BIA Division of Transportation
BIAHSO	BIA Highway Safety Office
BIA WRO	BIA Western Regional Office
BIA WRO DOT	BIA Western Regional Office Division of Transportation
BTTSC	Building Tribal Traffic Safety Capacity
CAD	Computer aided drafting
CBC	Capital Budgets Committee
CD	Compact disk
CDC	Centers for Disease Control and Prevention
CPS	Child passenger safety
CRIS	Criminal Records Information System
DOT	Department of Transportation
DPS	Department of Public Safety
DUI	Driving Under the Influence
EHS	Environmental Health Services
EMS	Emergency Medical Services
FARS	Fatality Analysis Reporting System
FHWA	Federal Highway Administration
FY	Fiscal year
GIS	Geographical Information System
GOHS	Governor's Office of Highway Safety
HES	Hazard Elimination Program
HSIP	Highway Safety Improvement Program
IHS	Indian Health Service
IHS OEH	IHS Office of Environmental Health
IRR	Indian Reservation Roads Program
ISDEA	Indian Self-Determination and Education Assistance Act
ITCA	Inter Tribal Council of Arizona, Inc.
MADD	Mothers Against Drunk Driving
MIS	Management Information Services
MOA	Memorandum of Agreement
MPO	Metropolitan Planning Organization
MS	Microsoft
MVC	Motor vehicle crash
NEMSIS	National Emergency Medical Services Information System

NCIC	National Crime Information Center
NHTSA	National Highway Traffic Safety Administration
NRC	Natural Resources Committee
OEM	Office of Emergency Management
OSHA	Occupational Safety and Health Administration
PAG	Pima Association of Governments
PD	Police department
PL	Public Law
RFP	Request for Proposal
RIFDS	Road Inventory Field Data System
ROW	Rights of way
RPMS	Resource and Patient Management System
RSA	Road safety audit
SAS	Statistical Analysis Software
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users
SEDS	Social and Economic Development Strategies (Program)
SHSP	State Highway Safety Plan
SMS	Safety Management System
SNAP	Safe Native American Protection
SPR 592	Project identification number for this research project
SR	State Route
STOP	Securing Tohono O’odham People
TAC	Technical Advisory Committee
TAP	Technical Assistance Plan
TEA21	Transportation Equity Act for the 21 st Century
TIP	Transportation Improvement Program
THSIP	Tribal Highway Safety Improvement Program
US	United States
VMT	Vehicle miles traveled
WISQARS	Web-based Injury Statistics Query and Reporting System

EXECUTIVE SUMMARY

The purpose of the SPR 592, Building Tribal Traffic Safety Capacity (BTTSC), project was to identify methods for assisting tribes develop their safety capacity in five areas: 1) Decision Making; 2) Data Collection, Storage, Maintenance, and Integration with Other Programs; 3) Equipment and Software; 4) Project Prioritization; and 5) Project Development, Implementation, and Evaluation. The approach used to conduct the research was described in the *Tribal Traffic Safety Model and Guidelines*.^[21]

The Tribal Traffic Safety Model and Guidelines were developed in 2004 by the project research team from the Inter Tribal Council of Arizona, Inc. (ITCA) as a planning resource for tribes and the Federal Highway Administration (FHWA). A four-task model process and nine policy and technical guidelines were prepared for tribes to consider when establishing Tribal Highway Safety Improvement Programs (THSIP) or implementing roadway projects using the Hazard Elimination System Program (HES), now known as the Highway Safety Improvement Program (HSIP).

The outcome of the project is expected to provide tribes the guidance to develop the decision making and technical structures needed to build traffic safety capacity. The eventual benefit will be the reduction of motor vehicle crashes and associated deaths, injuries and property damage occurring on reservations. Nationally, the annual motor vehicle crash (MVC) mortality rates for American Indians per 100,000 population have been three to four times greater than for the general public. This trend has also been consistent in Arizona (AZ). The annual MVC mortality rates for American Indians in AZ per 100,000 population have been three times higher than the statewide rate.

Through a competitive process, three tribes in AZ were selected to participate in the project. The tribes selected were representative of small, medium, and large tribes in the state. Each participating tribe agreed to a Technical Advisory Plan (TAP) that outlined the project responsibilities.

A comprehensive *Tribal Traffic Safety Funding Guide*^[22] was developed in 2006 in anticipation that the tribes participating in this project would need funding to implement their traffic safety programs or projects. Forty-one potential traffic safety funding programs were identified and described in the guide. The name, description, funding, and administering agencies, funding uses, eligibility and application requirements, application timing, funding source and level, contacts, funding requirements, and information sources are shown for each program.

Teams, formed by lead staff assigned by the tribal leadership, were tasked to assess the safety issues. Each team was composed of a wide range of tribal departmental interests and, in two instances, involved external agencies. The teams utilized brainstorming, preliminary MVC data analyses prepared by the research team, and local knowledge to identify lists of traffic safety issues.

The availability of crash, roadway, emergency medical services (EMS), and citation data was explored. Predominantly, the available crash data were analyzed to determine the magnitude of each safety issue for each tribe. The teams prioritized the greatest needs, and selected potential funding sources to implement a safety project.

Two teams identified specific funding sources for at least some aspect of their highest priority projects. Tribal actions necessary to secure funding were acknowledged, and steps were taken to obtain the funding after the tribal councils or tribal leaders concurred.

A discussion of employing project implementation teams was presented. The utilization and composition of an implementation team for each tribe varied, because of the differing nature of the three traffic safety projects.

Implementation plans for each tribe's priority project were created. Two teams designed detailed work plans for the entire project, and one team developed the scope for a portion of the project. The plan for one of the teams included specific outcomes, dates, and responsibilities for each portion.

The planning actions for building traffic safety capacity have been described. The plans differed among the tribes, because of the three project types for data management, occupant protection, and roadway improvement. An analysis identified the needed capacity to address the five capacity areas. Issues surfaced within all five of the capacity areas.

A guide, listing capacity-building methods for the five capacity areas, was developed for the tribes. The methods for increasing tribal capacity were defined by program initiation; program organization; program staffing; training; resources and other actions. Although the list of methods is not exhaustive, the guide provides a sound basis for identifying specific capacity building methods to meet individual tribal circumstances. The guide also identifies potential sources of participation or support for implementing the identified capacity building methods. Both potential internal and external participation and support sources are listed for methods that can be implemented internally or using external expertise.

This project presented the first opportunity to test the validity of the *Tribal Traffic Safety Model and Guidelines*.^[21] Each of the four tasks of the model process and each of the nine component guidelines were analyzed on the basis of the experience gained from applying them to this research project. The results of the analysis have been presented in recommendations for either retaining or modifying the model and guidelines in their present form. A revised *Tribal Traffic Safety Model and Guidelines*^[21] is available by contacting the Inter Tribal Council of Arizona, Inc.

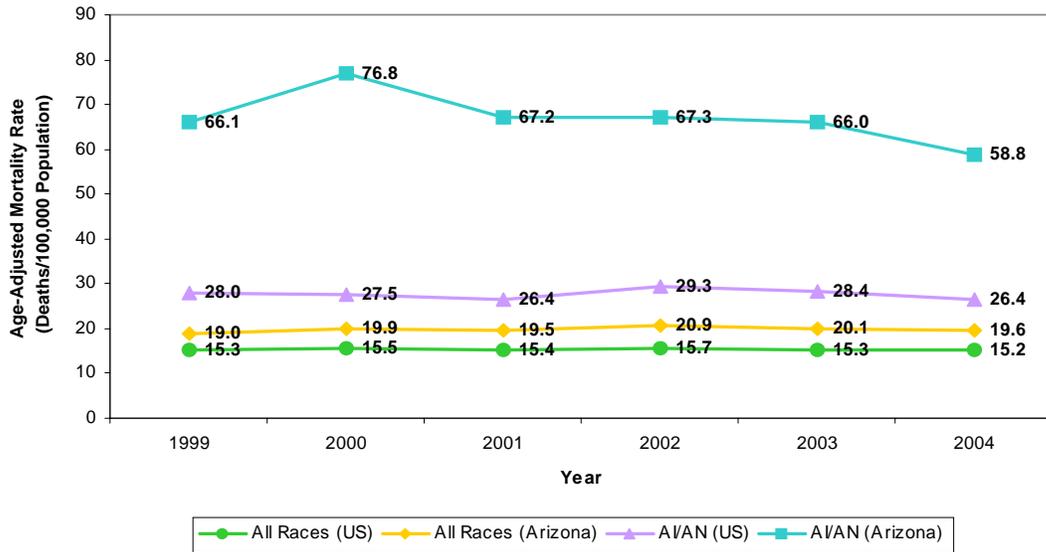
Ten conclusions and five recommendations are presented. Although each of the tribes participating in this project made strides in building its tribal traffic safety capacity, none of the three reached a high level of capacity building. There are several reasons for this outcome. The availability of good MVC data and resources to address transportation and traffic safety at the tribal level are major factors. An expanded tribal traffic safety capacity building program should be a future consideration.

1.0 INTRODUCTION

1.1 BACKGROUND

Tribes and their citizens have been severely impacted by the consistent and numerous occurrences of MVCs on tribal lands in AZ. Figure 1 presents the 1999 through 2004 national MVC mortality rates for American Indian and Alaskan Native populations compared to the total populations in AZ and the US.^[1]

Figure 1: MVC mortality rates for American Indians/Alaska Natives and all races in the US and AZ, 1999-2004.



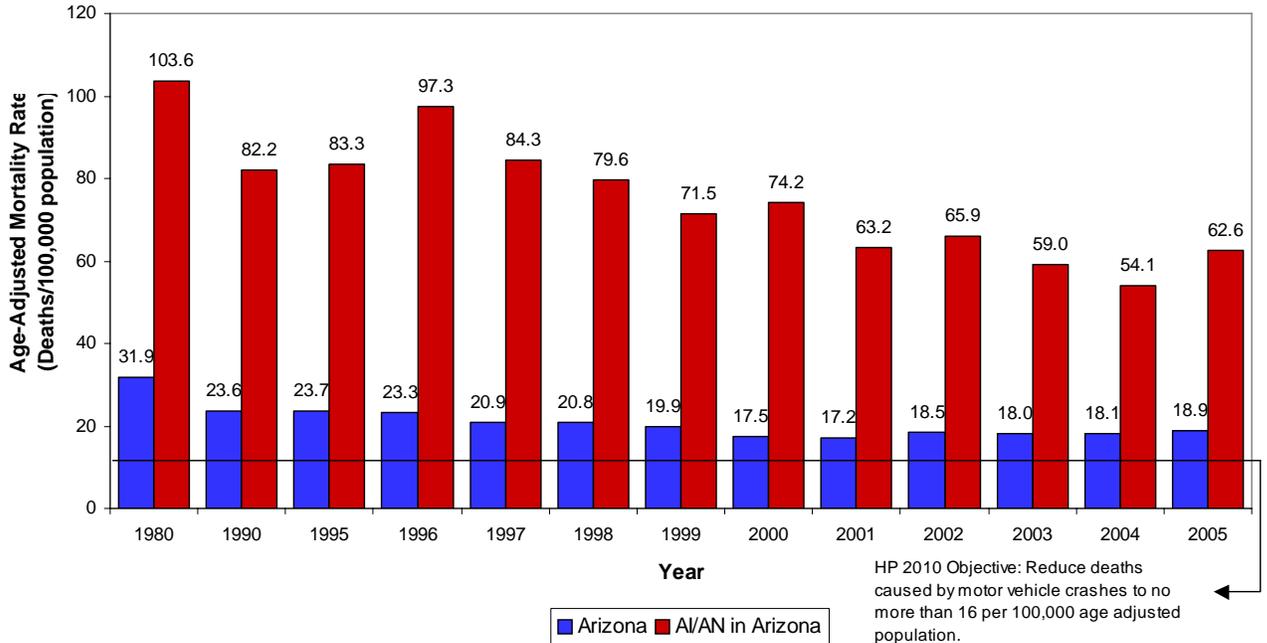
Data Source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.^[19]

In AZ, the MVC mortality rate for American Indians has been almost four times the rate for the next closest ethnic group. From 1990 through 2000, this rate has been 74.3 deaths per 100,000 population. MVCs are the leading cause of death for American Indians, ages 1 to 44.^[2]

According to 1998-2005 combined data provided by the AZ state departments of health and transportation, a portion of the twenty-two tribes in AZ lost 903 members with an estimated economic impact of \$904,431,000.^[2-17] These figures may be underestimated because the MVC mortality data specific to each of the twenty-two tribes have not been available. From 1998 through 2003, the Arizona Department of Health Services (ADHS) published mortality information for fourteen of the twenty-two tribes and expanded this information to include five additional tribes in 2004 through 2005.

Figure 2 shows the trends in the MVC mortality rate for American Indians in AZ in 1980, 1990, and 1995 through 2005. Although there has been a downward trend, the rates for American Indians have still exceeded the statewide rate by about three times.^[21]

Figure 2: MVC mortality rates for American Indians/Alaska Natives and all races in AZ, 1980, 1990, 1995-2005.



Data Source: Bureau of Public Health Statistics, ADHS. AZ Health Status and Vital Statistics Report, 2005.

1.2 PROJECT OVERVIEW

The SPR 592, BTTSC, project provided the means to assist three tribes in AZ to increase their capacity to address traffic safety, while simultaneously assessing a tribal model process and guidance. Figure 3 shows the Indian reservations in AZ and the locations of the three tribes selected to participate in this project. The Gila River Indian Reservation is located in central AZ; the Hualapai Indian Reservation is situated in northwest AZ and the Tohono O’odham Indian Reservation is in southern AZ.



Figure 3 American Indian Reservations and Transportation District Boundaries

In 2004, the *Tribal Traffic Safety Model and Guidelines*^[21] was created for tribes by the research team. ITCA undertook the development of the model and guidelines to address road concerns and highway safety (engineering) projects on Indian reservations. A process, consisting of four tasks, three policy components, six technical components, and guidelines was developed to help tribes compete for and access the HES, which is a FHWA data driven program to identify and eliminate hazardous highway locations on public roads. The intent of the guidance has been to assist tribes to:

1. Develop incrementally and tailor a system for managing traffic safety, and
2. Provide decision support to:
 - Identify safety programs to match tribal needs.
 - Meet program requirements.
 - Apply for HES and other traffic safety funds.

The model outlined four basic tasks to start either a comprehensive THSIP or a safety project. The guidance emphasized the technical requirements needed to build traffic safety capacity and to develop a comprehensive process aimed at protecting citizens on tribal roadways. The basic components are shown in Table 1.

The BTTSC project presented the first opportunity to test the validity of the model and guidelines contained in the *Tribal Traffic Safety Model and Guidelines*.^[21] The four tasks of the model process and the nine component guidelines were each assessed for relevance, based on field experience.

The project activities were interrelated: 1) Examining the traffic safety capacity of the three tribes to implement a THSIP; 2) Assisting the three tribes to each organize for and implement at least one traffic safety countermeasure; 3) Creating a *Tribal Traffic Safety Funding Guide*^[22] detailing the availability of safety funding for tribes; and 4) Modifying the original *Tribal Traffic Safety Model and Guidelines*,^[21] based on the field experience, to improve the methodology and guidance for tribes.

Project Benefits

Potentially, the BTTSC project was substantive for the tribes, as well as ADOT, because the research focused on specific capacity-building techniques to assist small rural governments who may have limited resources. The guidance and products can facilitate the implementation of countermeasures aimed at reducing the negative effects of MVCs.

Tribes need guidance and sufficient resources to establish and maintain a THSIP and related activities. The technical and financial guidance serve as blue prints for organizing countermeasures and perpetuating working relationships to improve public safety for all motorists.

Table 1 Summary of the Tribal Traffic Safety Model and Guidelines^[21]

Components		Phases					
		1	2	3	4	5	6
Model	Tasks	Determine whether a tribe has a highway safety problem	Select funding sources that a tribe may pursue to address the highway safety problem	Plan for a THSIP or a safety project	Implement the Tribal HES project based on the plan		
	Policy	Intergovernmental policy issues	Tribal structure, including roles and responsibilities	Training requirements			
Guidelines	Technical	Data requirements, collection, storage and maintenance	Equipments and software requirements	Hazardous roadway location identification	Hazardous roadway location prioritization	Scoping, prioritization and funding application	Safety project development and education
	Capacity Areas	Decision making	Data collection and storage	Equipment and software	Project prioritization	Project development, implementation and evaluation	

1.3 PROJECT SCOPE

The project consisted of five principal tasks with multiple subtasks and activities, which are summarized in the following paragraphs. The project work plan is shown in Appendix 1.

Task 1– Identify Key Elements

The three key elements involved the research team completing: 1) The preparation of an introduction to the project; 2) The selection of the tribes to participate in the project; and 3) The formation of the *Tribal Traffic Safety Funding Guide*.^[22] The research team relied on previous experience working with tribes to carry out these activities.

Task 2 - Implement the Model Process for a THSIP

Task 2 involved each of the three tribes undertaking major planning efforts: 1) To determine whether traffic safety problems existed; 2) To select sources of funding to address the traffic safety issues; 3) To plan for the development of a THSIP or a safety project; and 4) To develop the capacity to implement a THSIP or a safety project. The process detailed in the *Tribal Traffic Safety Model and Guidelines*^[21] was utilized by the research team to guide the tribal activities.

Task 3 – Develop Recommendations for Capacity-Building Methods to Be Considered during the THSIP Implementation

For Task 3, the research team with assistance from each of the three teams produced recommendations for building traffic safety capacity and implementing THSIPs. The capacity building techniques concentrated on five areas: 1) Decision-making; 2) Data collection and storage; 3) Equipment and software for data management; 4) Project prioritization; and 5) Project development, implementation, and evaluation.

Task 4 – Finalize Report and Research Notes

Task 4 involved modifying the *Tribal Traffic Safety Model and Guidelines*^[21] and composing the final documentation. The modifications were based on the field experiences achieved while assisting the tribes to apply the model processes. The model modifications, final report and research notes were produced with feedback from the participating tribes and the SPR 592 project Technical Advisory Committee (TAC).

Task 5 – Present Research Results

The research team summarized the highlights of the project in MS PowerPoint[®], and presented them to an audience selected by the SPR 592 project TAC.

1.4 ORGANIZATION OF REPORT CONTENTS

The report is organized in the order that the project tasks, subtasks, and activities were performed. This organization provides assistance in understanding the project logic and provides continuity in reading the report.

2.0 PROJECT INITIATION

The BTTSC project commenced simultaneously on two fronts: 1) The selection of three tribes to participate; and 2) The creation of a *Tribal Traffic Safety Funding Guide*.^[22] Initially, a method for selecting three tribes was developed. Financial resources would be essential for tribes to build and sustain any traffic safety initiative. Consequently, the latter involved researching and publishing a guide on federal, state and private sources of tribal traffic safety funding.

2.1 SELECTION OF TRIBES TO PARTICIPATE IN THE DEMONSTRATION PROJECT

2.1.1 Develop Selection Criteria

A questionnaire was designed to help determine the potential capability and the readiness of a tribe to successfully complete a BTTSC project. The questions focused on traffic safety data, partnerships, coordination, and prior traffic safety and transportation activities.

In most cases, the responses were acquired through telephone interviews, except in one instance, upon tribal request, the questionnaire was forwarded to the staff for their written responses. Indian Health Service (IHS) Office of Environmental Health (OEH) staff was also interviewed to gain further insight on the coordination of traffic safety activities on the reservations. The interview questions are shown in Table 2 on page 11 and the background information of the selected topics is provided below.

Traffic Safety Data

The collection and maintenance of traffic records, including MVC reports, traffic counts and the roadway characteristics are fundamental to the development of a THSIP or safety project. Tribes are in the initial stages of establishing or enhancing the management of their own traffic records.

For decades, the IHS and the Bureau of Indian Affairs (BIA) Law Enforcement and the Division of Transportation, have been the primary agents of data collection associated with tribal traffic safety. Inventories of road characteristics, traffic counts, crash reports, and hospitalization records have been administered by the agencies. Additionally, the majority of tribes have relied on the IHS OEH to monitor MVC injury surveillance and to report these findings to the tribal administrations.

With the passage of Public Law (PL) 93-638, the Indian Self-Determination and Education Assistance Act (ISDEA) of 1975, tribes have been provided options to assume the program responsibilities from the BIA and IHS. Some tribes, either through self-determination contracts or self-governance compacts, have managed the collection of data on roadway characteristics and traffic counts from the BIA Division of Transportation (BIADOT); assumed responsibility from BIA Law Enforcement to investigate and document MVCs on Tribal lands; and/or taken over from IHS the

administration of health services, including records management and injury surveillance. Additionally, some tribes have institutionalized procedures to approve and oversee public health research involving their citizens and data sharing.

Coordination

The National Highway Transportation Safety Administration (NHTSA) prescribes the collaboration of the four E's: education, enforcement, EMS, and engineering. For tribes, successful outcomes require extensive internal and external collaboration, because numerous tribal departments, as well as federal and state agencies, may potentially be involved. Historically, the IHS through injury prevention programs, has been funding traffic safety activities with or on behalf of tribes. Injury prevention coalitions have assisted the tribal and IHS OEH staff conduct, monitor, and promote community traffic safety activities.

Previous Traffic Safety Activities

Tribes have had various levels of experience implementing traffic safety activities. In a 2001 report prepared for ADHS, the traffic safety initiatives being conducted on Tribal lands were acknowledged: 1) The majority of injury prevention activities have been funded by the IHS; 2) The most prevalent activity has been child passenger safety (CPS); and 3) The two activities least likely to be addressed by the tribes or IHS have been a) traffic records management and b) engineering projects to eliminate hazardous roadways.^[22]

Tribal Councils

Federally recognized tribes have diverse governing structures and processes for decision-making. Familiarity with the organizational protocols has been key to working with tribes. Inherent governing power and authority of the tribes have encompassed protecting the health, safety, and welfare of tribal citizens living on Indian lands.

Agency Partnerships

Technical assistance and support have been fundamental to helping tribes to implement a THSIP or safety project. Building upon the resources and support started by the IHS, BIA, and ADHS have helped launch additional partnerships to improve traffic safety on tribal lands.

Transportation Activities

The *Tribal Traffic Safety Model and Guidelines*^[21] emphasized the utilization of the 4 E's to promote safety on tribal lands. The 4 E approach required transportation (engineering) and EMS participation, in addition to the traditional involvement of health and law enforcement staff.

Table 2 Tribal Selection Process Questions

Data Questions
Has the tribe completed a traffic records data assessment?
Does the tribe have an automated database of accident reports?
What is the name of the database software?
Has the traffic safety data been analyzed?
Has the traffic safety data been prioritized?
Is the data accessible to others outside of the police department?
Does the tribe have a (Memorandum of Agreement) MOA with the ITCA to share health data?
Does the MOA include sharing MVC data?
Coordination Questions
Has the tribe established a traffic safety or injury committee?
What departments are represented on the committee?
Are MVCs a major emphasis of the committee?
Does the tribe have an institutional review board?
Traffic Safety Activity Questions
Does the tribe employ injury staff?
Have prior traffic safety activities been conducted on the reservation?
Has the tribe used MVC data to identify previous traffic safety projects?
Has law enforcement played a major role in the traffic safety activities?
Does the tribe have a known (recent) traffic safety problem?
What is the problem?
Tribal Council Questions
Has Council been asked to act on any traffic safety projects?
Has the Council adopted a resolution concerning traffic safety activities?
Has the Council adopted a resolution establishing a data sharing process?
When does Council meet?
What oversight committees will require presentations to approve involvement in this program?
Agency Partnership Questions
Has the tribe partnered with IHS to address traffic safety?
Has the BIA WRO assisted the tribe with traffic safety?
Has ADHS identified this tribe as having high tribal MVC injuries?
Transportation Questions
Is the tribe active in transportation?
Does the tribe employ transportation staff?
How many miles of roads are on the reservation?
What are the vehicle miles traveled?
Are the tribal transportation services under a PL 93-638 compact or contract?
What type of public law (PL 93-638) transportation services contract?
Has the tribe been active with the ITCA Transportation Working Group?
Other Questions
How many enrolled members does the tribe have?
What is the reservation area in acres?

2.1.2 Identify Potential Tribal Governments to Participate in Project

The project scope required that three diverse tribes participate. All tribes in AZ were canvassed for their potential participation. Approximately 119 representatives from eight tribal departments, relating to traffic safety, were identified from ITCA's extensive network of contacts. The traffic safety-related departments were transportation, law enforcement, EMS, fire, health, court, planning, and injury prevention or public safety.

A letter was prepared for the Tribal Leaders with copies for the 119 administrative staff to: 1) Introduce the BTTSC project; 2) Solicit the tribes' participation in the interview and application processes; and 3) Identify a lead person to address the interview and if selected, to coordinate the project with ITCA. A follow-up letter, readdressing the project, was prepared for four tribes that had not participated in the original request. The remaining leadership was contacted until either final responses were achieved or time ran out prior to the selection process. Upon conclusion of the solicitation, ten tribes affirmed interest to participate, four declined participation, and seven did not respond.

Of the ten tribes that acknowledged interest in the project, eight tribes completed interviews with ITCA. The eight responses were noted on the questionnaires. To maintain the anonymity of the tribes during the selection process, numbers were substituted for the government names on the completed questionnaires.

2.1.3 Select Tribal Governments to Participate in Project

A total of four representatives comprised the multi-agency selection team: Two representatives from the Arizona Department of Transportation (ADOT), one representative of the FHWA AZ Division Office, and one project researcher. A second researcher prepared the meeting materials and facilitated the proceedings, but did not participate in the selection.

To facilitate an equitable assessment, the eight tribes were categorized into two groupings, based on their population, reservation size, and vehicle miles traveled (VMT). Group One included the two larger tribes. Group Two incorporated the six small and medium tribes.

Five major areas comprised the selection criteria: 1) Coordination, 2) Readiness, 3) Demonstrated interest in transportation and/or traffic safety, 4) Data availability and 5) Magnitude of the transportation system. The rating system was based on a continuum of one through five, five being the highest rating and one the lowest rating.

The selection team members discussed their individual ratings and collectively selected three tribes as primary participants and identified three additional tribes as alternate participants. Both the primary and alternate participants included one large tribe from Group One, and one small and one medium tribe from Group Two.

The three primary participants selected were the Hualapai Tribe, the Gila River Indian Community, and the Tohono O’odham Nation. The demographics for each tribe, as well as the administration of the traffic safety related programs, were diverse, as summarized in Table 3.

Table 3 Transportation Capacity Attributes of Tribes Selected to Participate in the SPR 592 Project			
Attributes	Hualapai Tribe	Gila River Indian Community	Tohono O’odham Nation
Size	Small	Medium	Large
Law Enforcement	Tribally administered	Tribally administered	Tribally administered
Road Maintenance	Tribally administered	Tribally administered	BIA-administered
Road Planning	Tribally administered	Tribally administered	BIA-administered
Road Construction	BIA-administered	Tribally administered	BIA-administered
EMS	Tribally administered	Tribally administered	IHS-administered
Injury Surveillance and Prevention	IHS-administered	Tribally administered	IHS-administered

2.1.4 Prepare Participation Proposal and Presentation

Follow-up with the eight tribes entailed the preparation of three customized letters to notify the primary tribes, the alternate tribes, and the remaining two tribes of the outcome of the selection process; and phone contact with the lead staff. Each of the eight tribal leaders received a letter detailing the selection process and the status of the tribe’s participation in the project.

In preparation for the orientation meetings, products were generated to provide the lead staff from the three tribes an overview of the project. The products highlighted the impact of MVCs for the tribes and the potential economic loss, and the project goals, tasks, schedule, roles, and responsibilities of the tribes and the research team. The initial products were:

1. Tribal specific MS PowerPoint® presentations – Impact of MVCs, Model guide, Schedule, Approach, Major tasks, Benefits, Potential resources, Agreement.
2. Overview paper – Purpose, Background, Benefits, Process, Timeline, Agreement.
3. Checklist of activities – Task 1, Determine whether a tribe has a highway safety problem.
4. Summary of Tribal Traffic Safety Demonstration Projects – Introduction, Method, Results, Discussion, Conclusion.
5. Tribal Highway Safety Improvement Program CD - Model process, including four-tasks, and a guide containing nine policy and technical considerations.

Upon the recommendation from the lead staff of the Gila River Indian Community, the introductory packets were modified to include eight handouts that supported the topics in the original MS PowerPoint® presentation. The three additional handouts were:

1. Selection criteria – Emphasis areas utilized during the selection process.
2. AZ MVC injuries map – Hospitalization rates per ten thousand persons, during 1995 through 1999, were mapped according to each AZ zip code area by the ADHS. The zip code areas reflected the injured persons' residence addresses, not where the crash occurred.
3. Chart of the estimated economic loss – Tribal specific number of mortalities, average cost of mortalities for 1998 through 2003, and comparison to the total number of tribal mortalities (for 15 tribes) and the total tribal average mortality cost (for 15 tribes).

2.1.5 Participation Proposal Presented to Selected Tribal Governments

The lead staff, assigned by the tribal leadership to coordinate each project, was selected from various disciplines. The Hualapai Tribe selected their Police Chief, the Gila River Indian Community assigned the project to the Transportation Director, and the Tohono O'odham Nation solicited assistance from both their Health and Human Services Director and Police Chief.

Three separate orientation meetings were convened with the lead staff. Tailored MS PowerPoint® presentations outlined the BTTSC project and related materials were introduced as the topics were addressed. Major concerns for all lead staff were the project tasks and timeline.

The foremost challenge was the staffing limitations. None of the tribes had centralized their traffic safety activities within one program nor were there staff working on traffic safety full time. Therefore, the completion of each tribal project was dependent on staff commitment and extensive coordination, which required time and sensitivity to the staff priorities. To accommodate the staff, an extension was requested of ADOT for additional time to plan and implement the three safety projects.

2.1.6 Letters of Agreement Prepared for Participating Tribes

A TAP outlining the major project tasks, responsibilities and a timeline, and was used to finalize the cooperative working relationship between the tribes and ITCA. The accompanying cover letter apprised the tribal leaders and lead staff of the project status and requested signatures of the tribal leaders.

2.2 IDENTIFICATION OF POTENTIAL TRAFFIC SAFETY FUNDING SOURCES AND DEVELOPMENT OF A TRIBAL HIGHWAY SAFETY FUNDING GUIDE

Access to available resources was vital to support the successful implementation of each safety project. Prior to the BTTSC project, no guidance for programming or funding traffic safety existed specifically for tribes. Therefore, early into the project the *Tribal Traffic Safety Funding Guide*^[22] was prepared to support the development of traffic safety programs or projects and to help tribes to determine, which safety funding sources to pursue and how to access the sources.

The program descriptions were organized by federal, state, and private sources. The sponsoring agencies and program offices were included for the federally funded programs. Since many of the federally funded programs are state administered, the administrative responsibilities and contacts were considered. At the state level, the program administrators within AZ were referenced. For tribes in other states, the contacts will need to be researched to identify the appropriate program funding agency, state departments of transportation (DOT), or the Governor's Highway Safety Offices (GOHS). Each program description included:

- Program Name
- Program Description
- Application Requirements
- Application Timing
- Contacts
- Sources
- Funding and Administering Agencies
- Program Funding Uses
- Funding Eligibility
- Funding Source and Level
- Funding Requirements

During the development of the *Tribal Traffic Safety Funding Guide*^[22], the federal surface transportation program transitioned from the Transportation Equity Act for the 21st Century (TEA-21) to the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU). To the extent known, the new SAFETEA-LU program provisions were included in the funding guide. A matrix of the uses and deadlines for each of the programs in the funding guide is shown in Appendix 2.

Table 4 Potential Internal and External Partners for BTTSC	
Tribal Departments/Programs	External Organizations/Agencies
Police Department (PD) Traffic Team Injury Prevention	ITCA Transportation Epidemiology Center
Health Department Women, Infant, Children Program Community Health Representative Health Education Injury Prevention	IHS Area OEH District/ Service Unit/Clinic Health Education Clinic Administration
EMS	BIA Regional Office Division of Transportation Law Enforcement Agency Superintendent Road Maintenance
Management Information System (MIS) or Information Systems Department	ADOT Local Government Section Engineering District Office Traffic Records
Fire Department	Mothers Against Drunk Driving (MADD)
Planning Department	
Transportation Department	
Public Works Department	
Judicial Department/Court	
Education Department	
Public Safety Department	
Tribal Council	

3.0 IMPLEMENT THE MODEL PROCESS FOR A TRIBAL HIGHWAY SAFETY IMPROVEMENT PROGRAM

The *Tribal Traffic Safety Model and Guidelines*^[21] provided the framework for assisting the three tribes' to address their traffic safety capacity. The activity checklist shown in Appendix 3 was used to monitor the implementation of the model process.

3.1 DETERMINE IF A TRIBAL GOVERNMENT HAS A HIGHWAY SAFETY PROBLEM

Each tribe initiated three steps to determine its traffic safety issues: 1) Recognize the traffic safety challenges being faced; 2) Acknowledge the magnitude of the issues; and 3) Identify potential resources to address the issues. The mechanism to carry out these initial steps was the establishment of multidisciplinary planning teams.

3.1.1 Establish a Tribal Traffic Safety Coordinating Team

Partnerships and networks were strategic to the sustainability, credibility, and support of the tribal traffic safety initiatives. The logistics and coordination of each planning team was complex because of the variety and number of tribal programs and external agencies administering portions of a traffic safety program. The research team devised a list of potential internal and external partners, shown in Table 4, for the lead staff to consider as they formed the teams. All the teams utilized various levels of support for their projects from either external agencies and/or additional tribal departments.

Gila River Indian Community

The planning team consisted of tribal representatives from the Transportation Department, EMS, PD, Environmental Health Services (EHS) of the Tribal Health Authority, Human Resources and Occupational Safety and Health Administration (OSHA) program, and Office of Emergency Management (OEM). The team involved the tribal MIS Department, which had data system expertise and experience working on the original data system request, as well as responsibility for the software vendor interviews. One external agency, ADOT's Traffic Records Section, provided an overview of the state crash data process to help the team understand the collection and retrieval processes.

Hualapai Tribe

The makeup of the planning team included staff from the tribal PD, EMS, Health Department, Tribal Court, Public Works, and the IHS Peach Springs clinic. The Tribal Planning Department was solicited to prepare a grant application. Two health agencies, IHS and ADHS, provided training.

Tohono O’odham Nation

Initially, the Executive Office was solicited for approval to interface the BTTSC project with the work of the Securing Tohono O’odham People (STOP) Coalition, a multidisciplinary coalition focusing on occupant protection and reducing MVCs. However, the Planning Department, which is responsible for transportation planning, proposed, and, to work with the research team to implement a roadway improvement project. The Executive Office supported this proposal. The Tribal Legislative Council Natural Resources Committee (NRC), which maintains transportation oversight, facilitated the implementation team. The implementation team membership included the NRC, Planning Department, PD, Gu Achi District (project location) leaders, ADOT’s Tucson District Office, and the BIA’s Papago Agency. External agency assistance by ADOT’s Traffic Records and Traffic Engineering sections, BIA Western Region Office (WRO) Division of Transportation (DOT), and FHWA provided the team with mapping and traffic counts, a crash analysis specific to a high crash location, safety equipment, staff to conduct a one-day class on doing a Road Safety Audit (RSA), a team to audit the high crash location, and a final report consisting of recommendations for improvements at the high crash location.

Each tribe was challenged with limited resources that impacted its ability to build traffic safety capacity. Many of these challenges were a direct result of the methods used by federal and state agencies to award financial support to tribes. Numerous safety programs award funds for tribal “projects,” not for the establishment or the maintenance of traffic safety “programs.” Projects usually last no longer than 12 months, focus specifically on product outcomes, and are not supportive of continuous planning activities, such as networking, data management, and technical assistance.

Federal agencies instituted means to support the state program’s flexibility and established sufficient financial support, including bonuses, to build safety and related transportation infrastructures, such as the state transportation departments, highway safety offices, planning organizations, and related programs. The mechanisms created for tribes often do not consider tribal sovereignty, which has led to ineffective and inflexible administrative rules and limited funding opportunities to address their safety needs.

Sufficient program flexibility and financial support directly impacted each tribe’s ability to develop a THSIP. As a result, instead of establishing a THSIP, each team started the process by working on one or several projects specific to traffic safety. The success of each project was determined by the collaborative opportunities and resources at hand.

3.1.2 Select Tribal Coordinating Team Leader

The various terminologies referencing safety activities – “transportation safety”, “traffic safety”, “highway safety” and “injury prevention” – denoted to the tribal leadership which staff to involve. Transportation and highway safety have been construed as

involving transportation or public works; traffic safety has been interpreted as a law enforcement assignment; and injury prevention has been inferred as health-related. During the introduction of the project to the tribal leaders, the research team requested the identification of a lead staff person to oversee the project and recommended that it be a community manager, planner, or health director.

The Police Chief managed both project planning and implementation for the Hualapai Tribe. , the Transportation Director delegated the Transportation Planner to coordinate the project planning and potentially the implementation phase for the Gila River Indian Community. For the Tohono O’odham Nation, the Police Chief and the Health and Human Services Director, with assistance from the STOP Coalition, planned for a primary seat belt law and the Planner lead the implementation of a roadway project.

3.1.3 Define Coordinating Team Responsibilities

An *Activity Checklist* was produced in anticipation of the need to help the tribes define the team responsibilities. During the first meeting with each of the lead staff, the *Activity Checklist*, including the four model tasks, sub-tasks, and activities, was reviewed.

The research team’s original strategy was to begin work with the smallest tribe, then move on to assist the medium-size tribe and the largest tribe. Many of the lessons learned from first working with the Hualapai Tribe assisted the research team to try new approaches with the Gila River Indian Community and the Tohono O’odham Nation.

One of the learned lessons involved the team responsibilities and the use of the *Activity Checklist*. The activities had been included on several of the meeting agendas with the Hualapai Tribe. However, it soon became apparent that the Task One activities, relating to the determination of safety issues, were too intensive for the tribe alone to complete. This challenge was evident for both the Gila River Indian Community and the Tohono O’odham Nation.

The data activities required more staff and computer resources than the three tribes had available. The research team decided to identify where the data was being stored, and to retrieve, compile, and analyze the data, so each planning team would have the necessary information to identify and prioritize the traffic safety issues. Instead of using the *Activity Checklist* to assist each planning team to define its responsibilities, such as assessing the magnitude of the safety problem and identifying available highway safety funding, the research team used the *Activity Checklist* to guide the sequence of tribal activities.

3.1.4 Brainstorm Tribal Highway Safety Issues

At the first project meeting, each planning team, using their knowledge of the communities, brainstormed the traffic safety challenges. The initial responses were recorded and categorized, utilizing the first two columns of the matrix in Table 5.

Table 5 Format for the Identification and Analysis of Tribal Traffic Safety Issues						
Safety Issue Category	Safety Issue or Action	Priority	Data Type	Infrastructure and Capacity Building Issues	Potential Resources	Application Timing
Data						
Child Passenger						
Occupant Protection						
Impaired Driving						
Hazardous Roadways						
Training						
Pedestrian & Bicycles						
Emergency Medical Services						
Citations						
General						

A combined list of issues and actions, identified by the three planning teams during the initial brainstorming, is provided in Table 6. For confidentiality purposes, the list does not include the identity of the tribe providing the issue. The list is substantial, demonstrating that there are numerous traffic safety issues facing these three tribes and potentially the remaining tribes in AZ. Eventually, each matrix was updated to reflect additional issues from each preliminary crash analyses. The analyses were previously explained under Section 3.1.5.

Table 6 Tribal Traffic Safety Issues and Actions Identified Through the Team Brainstorming	
Safety Issue Category	Safety Issue or Action
Data	The tribal court's data system has traffic data available, if a citation was issued.
	IHS will complete a multi-year injury study in the next few months, which included hospitalization and EMS data.
	The police reporting system (Spillman) has been electronically based for the past 18 months.
	The police reporting system has querying capability.
	The PD has crash history from August 2002. Prior to that time, the crash data was maintained in the BIA-owned Criminal Records Information System (CRIS), which is inaccessible.
	AZ Department of Public Safety (DPS) data needs to be retrieved.
	Tribal accident reports are submitted to ADOT for incorporation into the Accident Location Identification and Surveillance System (ALISS).
	The tribe has an up-to-date traffic code that includes a secondary seat belt law and a 0.08 blood-alcohol standard.
	Data will be essential in assessing and prioritizing traffic safety issues.
	The tribe does not have a MIS staff person to assist in data storage and analysis.
	It was acknowledged that there are good MVC (accident) records available for the reservation.
	Follow-up traffic investigations conducted off tribal lands is time consuming and resource intensive.
	PD fatality crash reports data may be on a database.
	MVC report sharing with ADOT – DPS usually responds to non-member crashes on state routes.
	County roads may be tribal or county responsibility.
	The EMS database tracks runs and patient information, and serves as billing database. The database provides non-native and native information. The data is not shared w/state, but can be shared with other Tribal departments if requested. One community has a contract to perform follow-up on patients transported to its hospital.
	OEM responds to major traffic incidents and tracks costs associated with response. It performs hazard analysis associated with transport of hazardous materials. Not all information is put together in a database. Both MS Access® and paper databases are used. A central Geographic Information System (GIS) system would be helpful.
	The OSHA Department collects data on sites that have a health assessment. ArcView and GIS is used to track sites. Work is underway to establish a state database. The department tracks responses to incidents. Most records are currently kept manually.
	There are some limited GIS capabilities in the Land Use Department.
	Health has Resource and Patient Management System (RPMS) data, but is not aware if anyone is extracting information. The Injury Control Group will be looking into the automation of data and reporting automatically for injuries.

Table 6 continued	
Tribal Traffic Safety Issues and Actions Identified Through the Team Brainstorming	
Safety Issue Category	Safety Issue or Action
CPS	Increase education and usage of CPS seats.
	Safety belt usage survey needed.
	CPS seat coordination occurring among EMS, IHS Health Educator, and Public Health nurses
	Children are not restrained in cars.
	The tribe has no laws to enforce child passenger restraint. One concern is how much to fine.
	The County does CPS seat distribution in coordination with fire department for training.
Occupant Protection	Passengers in back of vehicles.
	Increased education and usage of restraint systems.
	A renewed effort should be made to obtain a primary seat belt law.
	Tribal members need to be educated on the use of seat belts and child restraints
	There has been discussion of the tribe updating its criminal code and adopting state of AZ traffic laws in their entirety.
	The PD has identified individuals who can provide testimony to support occupant protection.
	The tribe has no laws to enforce occupant restraint. One concern is how much to fine.
	The Department of Public Health conducted a survey to determine why people don't wear seat belts. The tribe is considering adopting state codes for seat restraint.
	An observational seat belt survey was conducted in 2005 and the results submitted to the PD as part of a national survey.
Impaired Driving	Driving under the influence (DUI) of alcohol or drugs, including underage drinking.
	The PD does not have sufficient signage for sobriety checkpoints.
	Intoxilizers are needed.
	PD does not have a phlebotomist to administer blood tests.
	The PD needs to improve its capacity to test for alcohol and drugs.
	Traffic enforcement needs to be increased.
	Speed is probably a problem.
	Many crashes occur on minor roads.
	Intersection-related crashes are a problem.
	There have been a lot of reports of animal-vehicle crashes.
Impaired driving is an issue facing the PD.	
Hazardous Roadways	Rollovers due to run-off-the-road crashes.
	Many crashes occur on minor roads.
	Intersection-related crashes are a problem.
	There have been a lot of reports of elk and livestock crashes.
	There were many specific roads and road locations identified that have safety issues. In many cases specific reasons for the issue were also identified.

Table 6 continued	
Tribal Traffic Safety Issues and Actions Identified Through the Team Brainstorming	
Safety Issue Category	Safety Issue or Action
Hazardous Roadways (cont'd)	Many vehicles park along the side of the roads for a variety of reasons, creating a hazard.
	Trucks and other vehicles bypassing state highways for closures or other reasons create a safety issue.
	Time of day does not seem to be a significant factor in crash patterns.
	Fence cutting for access leads to MVCs.
	Transportation of hazardous materials is an issue concerning the OEM.
	Road safety, rain, dirt roads, signs, lighting, community growth resulting in increased traffic that the roads are not able to handle.
	Traffic management around incidents related to homeland security/emergency management is a concern.
	There is a safety problem on a high volume road with traffic speeding and a mix of automobiles, semis/trucks, and bicyclists.
	Trash along the roadways is a safety issue.
	Growth and development will lead to increased traffic and safety problems and the need to expand road capacity.
Training	IHS can provide CPS education through its Safe Native American Protection (SNAP) course.
	EMS has conducted school safety fairs to promote bicycle and pedestrian safety. Helmets and posters have been distributed.
	The IHS Clinic offers prenatal training that could incorporate traffic safety training.
	Train tribal government employees on traffic safety, which could reduce insurance costs for the tribe.
	The tribe does not have an employee traffic safety handbook.
	The PD has been able to reduce the insurance premiums for its motor vehicles by requiring drivers' education for its officers.
	Training/education for the community is needed.
	The Director of GOHS should make presentations to the tribal community.
Pedestrians and Bicycles	Pedestrian crashes along specific roadways and roadway locations are a problem.
	Bicyclists along high volume roadways.
	Pedestrians walking along and across roadways to specific destinations.
EMS	EMS response is delayed due to an inaccurate mapping and addressing system for the reservation.
	Street name signs are needed.
	911 calls are routed to a community outside the reservation, where there is a delay in getting the information back to tribal first responders.
	IHS can help with the 911 calling issue.
	EMS owns an extrication tool, but the tool is in a BIA extrication vehicle, which is stored at BIA facility, resulting in delayed extrications.
	Transportation of hazardous materials.

Table 6 continued	
Tribal Traffic Safety Issues and Actions Identified Through the Team Brainstorming	
Safety Issue Category	Safety Issue or Action
Citations	A first offenders program is needed that will provide education and training options in lieu of penalties.
	More detention facilities are needed.
	The capacity of the BIA-operated detention system is inadequate.
	The tribal courts dedicate one day a week to traffic citations and can handle the traffic citation workload.
	Redirecting court citation money to traffic safety should be a consideration.
	Speeding, especially with non-members driving through the community.
General	The possibility of applying for IHS tribal capacity funds would allow hiring a full time injury prevention specialist for the tribe.
	Other potential funding sources for traffic safety include fuel tax and vehicle licensing agreements with the state.
	Traffic safety relates to two of three Health and Human Services departmental objectives – injury and alcohol interventions.
	The coordinating team could be augmented by organizations with an interest in or responsibility for traffic safety, such as schools, MADD, Explorers, tribal court, Youth Council, and ADOT.

3.1.5 Traffic Safety Data Availability

The NHTSA traffic records guidelines had been referenced in the *Tribal Traffic Safety Model and Guidelines* and served to guide the data collection activities of the planning teams. NHTSA has recommended including six types of traffic records in the development of a Safety Management System (SMS): 1) Crash, 2) Roadway, 3) EMS, 4) Citation/adjudication, 5) Driver licensing, and 6) Vehicle licensing.^[22]

A majority of the tribal traffic records have been collected by agencies outside of the tribes. ADOT processes the data for all driver and vehicle licensing in Arizona. The BIADOT has compiled and archived the roadway data for all three tribes. IHS has collected and maintained the EMS and injury surveillance data pertaining to its patients.

The mechanism for tribes to contract services or programs from the BIA and/or the IHS is PL 93-638, the ISDEA. In the case of traffic safety, the tribes, using PL 93-638, can assume responsibilities for transportation, law enforcement, EMS, and/or medical services, including the collection and maintenance of the crash, citation/adjudication, roadway, traffic, and EMS records.

Traffic Safety Data Survey

A *Traffic Safety Data Survey* was designed to assist the tribal project teams to determine actions to establish or enhance the electronic management of traffic records. The *Traffic Safety Data Survey* was abandoned and replaced by a *Traffic Records Checklist* developed for a concurrent project conducted for FHWA. Rather than collecting information on the various systems, the identification of the data elements proved more

useful. Several approaches were used by the research team to compile the tribal responses: The research team: 1) Requested the lead staff persons to interview tribal department directors or program managers to acquire responses, 2) Asked the planning teams to collectively respond during a planning meeting, or 3) Worked with the tribal departments to interview the appropriate staff to collect information. Strategy three proved to be the most effective. The staff were assured the responses would not be distributed outside of the teams. The *Traffic Safety Data Survey* is shown in Appendix 4.

Traffic Records Availability

Four of the six traffic records recommended by NHTSA were applicable to the BTTSC project: 1) Crash, 2) Roadway, 3) Citation, and 4) EMS. Table 7 provides overviews of how these four traffic records have been generally managed for the three tribes. The information presented was derived from interviews with the tribal, BIA, IHS, and ADOT staff. The Gila River Indian Community administers the transportation, EMS, enforcement, and medical services. The Hualapai Tribe oversees transportation, EMS, and enforcement; IHS provides medical services. The Tohono O’odham Nation directs enforcement; the BIA conducts transportation activities, and IHS provides EMS and medical services.

Table 7 Traffic Records Availability	
Crash Data Overview	Crash Data Findings
<p>PDs respond and document reportable MVCs on public roads. ADOT developed the state <i>Arizona Traffic Accident Report (ATAR)</i>, (see Appendix 5), using the NHTSA traffic and highway standards, to document the reportable crashes, and the accompanying <i>Manual of Instruction</i> to promote the standardization of crash records.</p> <p>Law enforcement officers responding to MVCs occurring on Tribal lands may be from tribally administered PDs, the BIA Law Enforcement, or the DPS. Various response arrangements between the tribal PDs and the BIA and DPS have been in place. The arrangements depend on three factors: 1) Ownership of the road, 2) Involvement of a tribal citizen, or 3) Involvement of a tribal police officer or vehicle.</p>	<p>The tribal police have been using the ATAR to collect uniform crash data. Each of the three tribal PDs has an automated data system. However, the systems have not been used to capture every data element on the ATAR.</p> <p>The IHS Tucson Area, OEH, developed for the Tohono O’odham PD a MS Access® database to maintain crash files pertinent to injury surveillance and have assisted the PD to reconcile crash data with ADOT Traffic Records. The IHS has routinely utilized these crash files to evaluate a seat belt promotional project and to survey MVC injuries and fatalities for the Tohono O’odham Nation.</p>

Table 7 continued	
Traffic Records Availability	
Crash Data Overview	Crash Data Findings
Some of these crash reports are forwarded to ADOT to input into the state database, ALISS. Each tribe has determined to what extent the PD shares crash data with ADOT. ADOT has been agreeable to accepting partial crash data from the tribal PDs. The BIA forwards copies of the crash reports to ADOT. DPS forwards the reports to ADOT, but may not forward copies to the tribal PDs.	One of the foremost findings was that the majority of decision makers, police officers, or transportation planners for the tribes have not been familiar with the state or federal collection processes used to compile crash data or that the data are utilized by transportation agencies to identify high crash locations and/or to justify roadway improvements.
Road Data Overview	Road Data Findings
The BIADOT has been responsible for compiling 55 factors related to each public road section on tribal lands, which is maintained in a national inventory database, the Road Inventory Field Data System (RIFDS). The tribe, through PL 93-638, may contract the data collection for the IRR inventory from BIADOT. Either the tribe or BIADOT may sub-contract the responsibility to a consultant. The consultant is obligated to submit the final data collection to the administrator of its contract. Tribal councils are responsible for reviewing the inventories and providing <i>Tribal Resolutions</i> to insert or delete road routes from the inventory. The BIADOT has been reviewing and approving the roadway data and updating RIFDS. In addition, the BIA agencies or tribes that have contracted road maintenance responsibilities from the BIA conduct the traffic counts.	Roadway inventories have been established for each of the three tribes participating in the project. However, the BIA WRO DOT, tribes, and consultants have been working on the inventory updates for many years. One of the last activities has involved adding the county and state routes (SR) to the IRR inventory. The tribes have associated the IRR inventory, including the roadway data, with the <i>Relative Need Distribution Factors</i> used to compute the IRR program funding allocations for the tribes. The roadway data are a portion of data used to calculate the cost to improve a road to standard and accounts for 50 percent of the formula. However, the roadway data are not being used in conjunction with crash data to document MVCs or high crash locations for the three tribes.
Citation Data Overview	Citation Data Findings
Tribal or DPS officers enforce the traffic codes and cite violations using a <i>Traffic Ticket and Complaint</i> . Citation forms may differ slightly to accommodate the varying court information.	Tribal or DPS officers enforce the traffic codes and cite violations using a <i>Traffic Ticket and Complaint</i> . Citation forms may differ slightly to accommodate the varying court information.

Table 7 continued	
Traffic Records Availability	
EMS Data Overview	EMS Data Findings
<p>The tribes, using PL 93-638, may contract from IHS to administer the EMS, or the IHS may perform the services. Tribal fire departments may also carry out emergency responses to MVCs on tribal lands. The IHS, or the tribal EMS and/or fire department, collect medical and transport information pertinent to the patient(s).</p> <p>Depending on the situation, EMS may have gathered data on seat belt usage and impaired driving. Most of the data has been filed within a tribal EMS, fire department, or IHS.</p> <p>However, to process reimbursements, information specific to billing may be shared outside of the tribal EMS, fire department or IHS.</p> <p>Through the enactment of SAFETEA-LU, Congress mandated NHTSA to determine model data elements that would be useful in the observation and analysis of traffic safety. One set of data elements promoted by NHTSA is the National Emergency Medical Services Information System (NEMSIS). NEMSIS was developed in 2001 by the National Association of State EMS Officials to respond to the need for uniform and consistent EMS data. NHTSA requires through its data improvement grants that states, including the “Indian State” comprised of 562 federally recognized tribes, adopt and use NEMSIS as soon as practicable.</p>	<p>Two tribal EMS programs completed the <i>Traffic Records Checklist</i>. The IHS EMS, serving the third tribe, did not participate. Approximately 50 percent of the NEMSIS data elements have been on file with each of the two tribal programs. One tribe manually maintains the data.</p>

3.1.6 Gather and Analyze Available Data

The compilation and analyses of available data were crucial to identify the traffic safety problems impacting the three tribes. The research team committed a significant portion of the project time to identify the methods used to collect and analyze traffic records. Several meetings were convened with ADOT and the BIA to learn the crash, traffic, and roadway data collection procedures.

No comprehensive reference specific to tribes exists that explains the processes for traffic records collection, and analyses. To decipher how data have been collected and analyzed for tribes, ITCA gathered related data references and participated in the following national and state data forums:

- AZ Governor's Traffic Safety Advisory Council
- AZ Traffic Records Coordinating Committee
- ADOT Data User Group
- ADHS Injury Surveillance Advisory Council
- Tribal Traffic Safety Coalition (AZ)
- Transportation Research Board, Native American Issues, Safety Sub-committee
- Crash Outcome Data Evaluation Systems Board (AZ)
- Traffic Records Forum (National)
- National Tribal Transportation Conferences
- IHS Injury Prevention Level I Course

The project planning process for each tribe was initiated by conducting three preliminary analyses of crash records. The research team was informed that the majority of tribes in AZ, including the three participating tribes, have contracted with the BIA law enforcement to administer their own PDs. Therefore, the tribal PDs have been responsible for responding and documenting the majority of crashes occurring on tribal lands. Partial crash data elements have been captured in the three police data systems. Each tribal PD has determined which data elements from the ATAR have been included in their automated crash files. The ATARs have been archived in manual files within each PD.

The research team relied on two methods to complete the preliminary crash analyses and the identification of the high crash locations. One method involved compiling tribal crash and EMS data and supplementing it with crash data on file with ADOT. The second method utilized only the crash data supplied by ADOT. The first method was applied with the Hualapai Tribe and the second method was employed to assist both the Gila River Indian Community and the Tohono O'odham Nation.

Data Collection

Gila River Indian Community

There was a two-part approach with the Gila River Indian Community. First, staff from the transportation, police, and EMS departments and the Health Authority were consulted to understand the departmental traffic records collection processes. Officers from the PD and the DPS have shared the responsibility for the crash investigations based on the ownership of the roadway and whether a Gila River Indian Community citizen was involved.

Both tribal and state law enforcement agencies have submitted ATARs to ADOT, so part two of the process involved requesting ADOT to forward crash data for January 1991 through August 2005. These reports were electronically downloaded from the ALISS database into MS Access[®] files and emailed to the research team. The ADOT files contained information for 2,675 MVCs.

ADOT sorted the crash reports by the National Crime Information Center (NCIC) number that identified the responding PD and the corresponding jurisdiction. For the Gila River Indian Community, the NCIC numbers are 1189 for tribal police responding to crashes occurring in Pinal County and 0764 for tribal police responding to crashes occurring in Maricopa County. The NCIC for the DPS is 0799.

The crash data included all the data elements from the ATAR, except personal identifiers and the narrative sections. ADOT also provided the research team with definition tables containing the text versions of the coded information for certain elements. The research team merged the MS Access[®] files, using the microfilm number as the common identifier, into one crash database.

Hualapai Tribe

The data compilation process for the Hualapai Tribe involved working with the EMS, the PD, and ADOT. The EMS Director identified and manually compiled response information from the 2000 through 2003 EMS run sheets and sorted them by year and location. The categories included: 1) Run number, 2) Transported, 3) Milepost number, 4) Time, 5) Date, 6) Involvement of alcohol or drugs 7) Seatbelt usage, 8) Type of injury; 9) Tribal resident involvement; 10) Responding agency; and 11) Type of crash. The ten available spreadsheets provided the research team with baseline information about the number and location of the MVCs occurring on the Hualapai Reservation for the last several years.

Since the Hualapai Reservation is an isolated area, 10 to 15 years of crash data, instead of three to five years of data, were compiled. The crash data have been filed in six locations: 1) BIA computer hard drive, which had been removed off premises, 2) ADOT Kingman District Office, 3) ADOT Traffic Records Section, 4) Tribal police data system, 5) Tribal police filing cabinets, and 6) Tribal police storage boxes.

ADOT was requested to provide specific information from all reported ATARs completed by the BIA and Hualapai Tribal Police back to 1991. Data for the 126 MVCs from April 1991 through July 2002 were supplied by ADOT. Three MS Excel[®] spreadsheets, sorted by NCIC numbers, contained seven categories: 1) Location, 2) Milepost number, 3) Distance, 4) Date and time, 5) Report number, 6) First harmful event, and 7) Manner of collision. The three spreadsheets were merged into a MS Access[®] database and the duplicate reports were deleted. Three reports were subsequently found not to be associated with the Hualapai Tribe.

During the sorting process, several high crash locations emerged. The police chief relayed that local street names also referenced the IRR route numbers, i.e. Buck and Doe is IRR Route 1. To understand the roadway system on the Hualapai Reservation, a copy of the IRR Inventory Update and the Hualapai Long Range Transportation Plan were requested from the Public Works Director. Using these references, the local street names were converted to standardized IRR route numbers. Given that ADOT had already established six-digit location names for the BIA routes, the IRR route numbers were modified to six digits, i.e. Buck and Doe (IRR Route 1) became BIA001.

In addition to using ALISS, the research team sorted through the August 2002 to September 2005 police archives to locate both ATARs and *Incident Reports* related to MVCs. An additional 157 reports were retrieved. Due to past computer malfunctions, no historic data from the BIA Law Enforcement MVC files were available, except the ATARs previously shared with ADOT.

The additional 157 reports were input into MS Access[®] and the number of database fields was expanded from seven to 51 to include additional information from these reports. The majority of the additional information was derived from the first and second pages of the ATAR and the narratives/summaries of the *Incident Reports*. Examples of additional information were road surface type, weather conditions, vehicle condition, direction, and vision obstruction.

Once the categories for the 157 reports were increased, information for the original 126 ADOT reports were also expanded, so all records had the same information. 72 data sets provided by ADOT were transferred into MS Access[®]. ADOT also supplied the definition tables.

The research team created MS Access[®] queries and established linkages between ADOT and ITCA data tables to create an overall table of 280 MVC records. Due to ADOT coding procedures, the ADOT codes were converted to text by querying and merging a majority of fields in the ALISS definition tables. In order to analyze the data and the trends, the research team exported the data from MS Access[®] back into MS Excel[®], to run and sort specific reports.

Although a total of 280 records were compiled, many records were not complete, especially those involving the *Incident Reports*. All of the 157 tribal reports were reviewed a second time to extract additional information about the crash environment, seatbelt usage, and the number of injuries and fatalities. The additional information was input into MS Access[®] and the MS Excel[®] reports were run a second time to sort the information.

The research team met with the police chief three times during the compilation process. The first meeting involved a review of the ADOT data acquisition and obtaining access to the police records. The second meeting was scheduled to review the data compilation process, to provide a copy of the original MS Access[®] database, and to explain the research team's recommendations for improving the collection and management of the Hualapai Police crash records. Preliminary findings were provided at the third meeting.

Tohono O'odham Nation

The research team had been apprised, during the development of the *Tribal Traffic Safety Model and Guidelines*, that the IHS OEH had assisted the PD to establish a MS Access[®] database to capture certain data elements from the ATAR. The police chief confirmed the PD was still utilizing MS Access[®]. The majority of crashes were documented by the PD. The Tohono O'odham Nation has three land bases within two counties. The NCIC

numbers are 1089 for tribal police responding to crashes on the Tohono O’odham Reservation, Pima County; 1164 for tribal police responding to crashes on the San Xavier Reservation, Pima County; and 0763 for tribal police responding to crashes on tribal land in Gila Bend, Maricopa County.

Based on this information, ADOT was requested to furnish crash data for January 1991 through August 2005. Consequently, 2,464 MVC reports were transferred from the ALISS tables into MS Access[®].

Data Analyses

Two approaches and varied software were employed to analyze the crash data. MS Access[®] and Excel[®] software were used to organize and analyze the crash data for the Hualapai Tribe and the statistical analysis software (SAS) helped to execute the analyses for the Gila River Indian Community and the Tohono O’odham Nation.

Hualapai Tribe

Both MS Access[®] and Excel[®] were used to conduct the preliminary crash analysis. The analysis identified system-wide, injury and fatality, and location/route specific issues. Data from many of the 280 available crash reports were incomplete. Twenty-three of the reports contained only the route and time, and for several other reports, only route, location, and time existed. However, the available data did provide valuable insight regarding crashes on the Hualapai Indian Reservation.

Gila River Indian Community and the Tohono O’odham Nation

The ALISS data tables were imported into SAS Version 8.0. Variables were recoded into text responses, based on the provided definition tables, in order to ease the analyses. Multiple data tables were merged by microfilm number, the unique identifier, into one master table. Data were sorted for three types of analyses: overall system-wide issues, injury and fatality, and location/route specific issues.

Since both of these tribes had a significant number of crash data on file with ADOT, the police *Incident Reports* were not examined to detect additional crash reports. The research team noted the standardization of location names would be helpful for subsequent location analyses, but decided against reconciling the location names for two reasons: 1) the IRR inventories for each of these tribes were not complete and 2) ADOT had not begun to upgrade the ALISS database.

3.1.7 Using Data to Assess the Magnitude of the Problem Associated with Each Tribal Highway Safety Issue

The MVC reports provided the most comprehensive set of data regarding safety performance of the roadway, vehicle, driver and other persons involved in the crashes. Consequently, crash data were used to identify, assess the magnitude and assist the tribes in prioritizing traffic safety issues.

Assessment of MVC Data

A preliminary crash analysis was prepared for each tribe, based on the ATAR data filed with ADOT by the tribal police, BIA and/or the DPS, and, in the case of the Hualapai Tribe, the data also included the information from *Incident Reports*. Three analyses were prepared and the findings summarized in separate MS PowerPoint® presentations for each team. The analyses confirmed many of the initial traffic safety issues in Table 6, but other traffic safety issues also surfaced. Table 8 summarizes the additional issues from the preliminary crash analyses.

Table 8 Traffic Safety Issue Findings from the MVC Reports for the Three Participating Tribes		
Safety Issue Category	Traffic Safety Issue	Findings
Data	Data availability	Much of the MVC crash data were incomplete or missing.
CPS	Child passenger protection	Infants and young children appear to be the least protected in a motor vehicle.
Impaired Driving	DUI of alcohol or drugs.	More than 10 % of drivers in all MVCs and as many as 35 % of the fatal MVCs were DUI.
	Driver fatigue or drowsiness.	Driver fatigue or drowsiness may have been a factor in as many as 6% of MVCs.
Hazardous Roadways	Location distribution of MVCs, injuries, and fatalities.	There were concentrations of MVCs, injuries, and fatalities by road and location on road. High-crash locations were primarily on SR or intersections involving an IRR route with a SR.
	Run-off-the-road MVCs	Over 30% of all MVCs involved run-off-the-road.
	Effects of light conditions	For two tribes about 60% of the fatal MVCs occurred at night, dawn, or dusk.
	Hour of day	The hour of day for the peak number of MVCs varied by reservation.
Training	Not applicable	Not applicable
Pedestrian & Bicycles	Pedestrian and cyclist involvement in MVCs.	A significant number of injury and fatal crashes involved pedestrians.
EMS	Not applicable	Not applicable
Citations	Speeding	About 20% of MVCs involved speeding.

Prioritization of Highway Safety Issues

Each team prioritized the tribal traffic safety issues using information from the brainstorming session combined with the findings contained in the preliminary crash analyses. The outcomes for each tribe are described in the following section.

Gila River Indian Community

The planning team chose the development of an integrated data management system with initial focus on crash data completed by the PD. The team considered reliable safety data essential for the effective operation of many of its departments. The implementation of a community-wide GIS/ computer-aided drafting (CAD) system will support the availability of traffic records for multiple departmental uses. When the initial project is implemented, support for building an ongoing traffic safety capacity will be developed.

Hualapai Tribe

The planning team picked four traffic safety-related projects in the following order of priority: 1) Occupant protection; 2) Speeding; 3) Impaired driving, and 4) Safety improvement of one intersection. Although the initial project centered on increasing occupant protection, associated fieldwork has incorporated actions to address speeding and impaired driving.

Tohono O’odham Nation

Two traffic safety priorities were identified: 1) Primary seat belt legislation and 2) Safety improvement of one intersection. The Tohono O’odham Nation subsequently passed primary seat belt legislation and then focused on the intersection improvement.

3.1.8 Potential Safety Funding Sources to Address Identified Traffic Safety Issues

The purpose of this section is to identify potential funding sources that could be available to address the traffic safety issues. Table 9 is a list of the programs that are organized, as they appeared in the *Tribal Traffic Safety Funding Guide*.^[22]

The matrix in Table 10 correlates each safety issue listed in Table 6 with the potential funding sources numbered in Table 9. Multiple potential funding sources were listed for most issues, which demonstrate the breadth of programs available to fund specific types of traffic safety projects. The viability of each listed source will depend on the specific project and how it relates to the objectives for the funding source. Tribal funding was not shown as a source, but was an option.

Program Number ^[22]	Program Name ^[22]
1	Community Facilities Grant
2	Rural Community Development
3	Alcohol Abuse Reduction
4	Safe Schools/Healthy Students
5	Social & Economic Development Strategies
6	Injury Prevention Program
7	Healthy Native Communities Fellowship
8	Tribal Management Grant Program
9	Family and Juvenile Treatment Drug Courts
10	Indian Reservation Roads Formula Program
11	Indian Reservation Roads High Priority Projects Program
12	Indian Highway Safety Program
13	Tribal Resources Grant Program
14	Tribal Courts Assistance Program
15	Indian Alcohol and Substance Abuse Program
16	Correctional Facilities on Tribal Lands
17	Drug Court Discretionary Grants
18	Edward Byrne Memorial Justice Assistance Grants
19	National Criminal History Improvement Program
20	Mental Health Courts Program
21	Tribal Youth Program
22	Highway Safety Improvement Program
23	Safe Routes to School
24	Highway-Rail Grade Crossing
25	Surface Transportation Program
26	Highway Bridge Replacement & Rehabilitation
27	Equity Bonus
28	Transportation Enhancement
29	State & Community Highway Safety Grants
30	Seat Belt Use Programs
31	Impaired Driving Grants
32	State Highway Program
33	AAA Foundation for Traffic Safety
34	Americorps Indian Tribes Grants
35	AT&T Education & Civic & Community Service Grants
36	Ford Foundation Grants & Loans
37	W. K. Kellogg Foundation Grants
38	Lumina Foundation for Education Grants
39	Robert Wood Johnson Health & Healthcare Grants
40	Indian Reservation Roads Flexible Financing
41	Highway Expansion & Extension Loans

Table 10 Potential Traffic Safety Funding Sources for Each Safety Issue or Action		
Safety Issue Category	Safety Issue or Action	Potential Funding Programs^[22]
Data	AZ DPS data retrieval.	1, 2, 5, 6, 8, 10, 12, 22, 25, 27, 29, 40
	Data essential for assessing and prioritizing traffic safety issues.	1, 2, 3, 5, 6, 8, 9, 10, 12, 15, 17, 18, 19, 20, 21, 22, 25, 27, 29, 30, 31, 33, 39, 40
	Having a MIS staff person to assist in data storage and analysis.	2, 5, 8, 10, 12, 13, 14, 15, 17, 18, 19, 20, 25, 27, 29, 30, 40
	Follow-up traffic investigations conducted off tribal lands was time consuming and resource intensive.	10, 12, 13, 15, 18, 30, 31, 40
	OEM responds to major traffic incidents and tracks costs associated with response. It performs hazard analysis associated with transport of hazardous materials. Not all information is put together in a database. Both MS Access [®] and paper databases are used. A central GIS system would be helpful.	1, 2, 5, 6, 8, 10, 12, 22, 25, 27, 29
	The OSHA collects data on sites that have a health assessment. ArcView and GIS is used to track sites. There is work underway to establish a state database. The department tracks responses to incidents. Most records were kept manually.	1, 2, 5, 6, 8, 10, 12, 22, 25, 27, 29
	There are some limited GIS capabilities in the Land Use Department.	1, 2, 3, 5, 6, 8, 9, 10, 12, 15, 17, 18, 19, 20, 21, 22, 25, 27, 29, 30, 31, 33, 39, 40
	Health has RPMS data, but is not aware if anyone is extracting information. The Injury Control Group will be looking into the automation of data and reporting automatically for injuries.	5, 6, 8, 12, 29, 30, 33, 35, 37, 39
CPS	Increase education and usage of CPS seats.	4, 5, 6, 7, 8, 12, 13, 29, 30, 33, 32, 35, 36, 37, 38, 39
	Safety belt and seat usage survey.	
	Children are not restrained in cars.	
	The tribe has no laws to enforce child passenger restraint. One concern is how much to fine.	5, 6, 8, 12, 29, 30, 33, 36, 37, 39

Table 10 continued		
Potential Traffic Safety Funding Sources for Each Safety Issue or Action		
Safety Issue Category	Safety Issue or Action	Potential Funding Programs^[22]
Occupant Protection	Passengers in back of vehicles.	4, 5, 6, 7, 8, 12, 13, 29, 30, 33, 32, 35, 36, 37, 38, 39
	Increased education and usage of restraint systems are needed.	
	Tribal members need to be educated on the use of seat belts and child restraints	
	A renewed effort should be made to obtain a primary seat belt law.	5, 6, 8, 12, 29, 30, 33, 36, 37, 39
	There has been discussion of the tribe updating its criminal code and adopting entirely the AZ traffic laws.	
	The tribe has no laws to enforce occupant restraint. One concern is how much to fine.	
	The tribe is considering adopting AZ codes for seat restraint.	
Impaired Driving	DUI of alcohol or drugs, including underage drinking, is a problem.	3, 4, 5, 6, 7, 8, 12, 13, 15, 17, 18, 20, 21, 29, 31, 33, 34, 35, 36, 37, 39
	The PD does not have sufficient signage for sobriety checkpoints.	1, 6, 12, 13, 29, 31
	Intoxilizers are needed.	1, 6, 12, 13, 18, 29, 31
	The PD does not have a phlebotomist to administer blood tests.	6, 12, 13, 18, 29, 31
	The PD needs to improve its capacity to test for alcohol and drugs.	1, 6, 12, 13, 18, 29, 31
	Traffic enforcement needs to be increased.	1, 6, 12, 13, 18, 29, 31
	Speed is probably a problem.	6, 12, 13, 29, 31
	Impaired driving is an issue facing the PD.	3, 4, 6, 7, 9, 12, 13, 17, 18, 21, 29, 31, 33, 34, 39
Hazardous Roadways	Rollover crashes are largely due to run-off-the-road crashes	10, 11, 12, 22, 25, 26, 27, 29, 32, 40, 41
	Many crashes occur on minor roads.	10, 11, 12, 22, 26, 27, 40
	Intersection-related crashes are a problem.	10, 11, 12, 22, 24, 25, 27, 29, 32, 40, 41
	There have been a lot of reports of elk and livestock crashes.	10, 11, 12, 22, 25, 27, 29, 32, 40
	There were many specific roads and road locations identified with safety issues. In many cases specific reasons for the issue were also identified.	10, 11, 12, 22, 23, 24, 25, 26, 27, 29, 32, 40, 41
	Many vehicles park along side the roads for a variety of reasons, creating a hazard.	10, 12, 22, 27, 28, 29, 32
	Trucks and other vehicles bypassing state highways for closures or other reasons create a safety issue.	10, 12, 22, 24, 26, 27, 29, 32

Table 10 continued		
Potential Traffic Safety Funding Sources for Each Safety Issue or Action		
Safety Issue Category	Safety Issue or Action	Potential Funding Programs^[22]
Hazardous Roadways Continued	Time of day does not seem to be a significant factor in crash patterns.	10, 11, 12, 22, 23, 24, 25, 26, 27, 29, 32, 40, 41
	Fence cutting for access leads to MVCs.	10, 11, 12, 22, 25, 27, 29, 32, 40
	Transportation of hazardous materials is an issue concerning the OEM.	5, 12, 22, 24, 25, 26, 27, 29, 32
	Road safety, rain, dirt roads, signs, lighting, community growth resulting in increased traffic that the roads are not able to handle.	10, 11, 12, 22, 23, 24, 25, 26, 27, 28, 29, 32, 40, 41
	Traffic management around incidents related to homeland security and emergency management is a concern.	5, 12, 13, 22, 24, 25, 26, 27, 29, 32
	There is a safety problem on a high volume road with traffic speeding and a mix of automobiles, semis/trucks and bicyclists.	1, 4, 10, 11, 12, 22, 24, 23, 25, 26, 27, 28, 29, 32, 40, 41
	Trash along the roadways is a safety issue.	10, 32
	Growth and development will lead to increased traffic and safety problems and the need to expand road capacity.	10, 11, 12, 22, 23, 24, 25, 26, 27, 28, 29, 32, 40, 41
Training	IHS can provide CPS education through its SNAP course.	6, 7, 12, 29, 30, 33, 34
	The IHS Clinic offers prenatal training that could incorporate traffic safety training.	3, 6, 7, 12, 18, 21, 29, 30, 31, 33, 34
	Train tribal government employees on traffic safety, which could reduce insurance costs for the tribe.	6, 12, 13, 21, 29, 30
	The tribe does not have an employee traffic safety handbook.	6, 12, 13, 29, 30
	The PD has been able to reduce the insurance premiums for its motor vehicles by requiring drivers' education for its officers.	6, 12, 13, 29, 30
	Training/education for the community is needed.	2, 3, 4, 6, 7, 9, 12, 13, 17, 18, 21, 23, 27, 28, 29, 30, 31, 33, 34, 35, 37, 39
	The Director of the AZ GOHS should make presentations to the tribal community.	29
Pedestrians and Bicycles	Pedestrian crashes along specific roadways and roadway locations are a problem.	1, 4, 6, 10, 11, 12, 22, 23, 25, 26, 27, 28, 29, 32, 40, 41
	Bicyclists along high volume roadways are a problem.	1, 4, 6, 10, 11, 12, 22, 23, 25, 26, 27, 28, 29, 32, 40, 41
	Pedestrians walking along and across roadways to specific destinations are a problem.	1, 4, 6, 10, 11, 12, 22, 23, 25, 26, 27, 28, 29, 32, 40, 41

Table 10 continued		
Potential Traffic Safety Funding Sources for Each Safety Issue or Action		
Safety Issue Category	Safety Issue or Action	Potential Funding Programs^[22]
EMS	EMS response is delayed due to an inaccurate mapping and addressing system for the reservation.	1, 5, 10, 12, 22, 29,
	Street name signs are needed.	1, 10, 12, 22, 29
	911 calls are routed to a community outside the Reservation, where there is a delay in getting the information back to Tribal first responders.	5, 12, 29
	IHS can help with the 911 calling issue.	6, 12, 29
	EMS owns an extrication tool, but the tool is in a BIA extrication vehicle, which is stored at a BIA facility resulting in delayed extrications.	1, 12, 13, 29
	Transportation of hazardous materials is a problem.	5, 6, 10, 12, 13, 29, 32
Citations	A first offenders program is needed that will provide education and training options in lieu of penalties.	3, 4, 6, 7, 9, 12, 13, 14, 15, 17, 18, 21, 29, 30, 31
	More detention facilities are needed.	1, 2, 16
	The capacity of the BIA-operated detention system is inadequate.	1, 2, 16
	Redirecting court citation money to traffic safety should be a consideration.	5, 15, 18
	Speeding, especially with non-members driving through the community.	6, 7, 12, 13, 29
General	The possibility of applying for IHS tribal capacity funds would allow hiring a full time injury prevention specialist for the tribe.	6, 8, 9, 12, 29, 30, 37, 39
	Other potential funding sources for traffic safety include fuel tax and vehicle licensing agreements with the state.	5
	Traffic safety relates to two of three Health and Human Services departmental objectives – injury and alcohol interventions.	3, 4, 6, 7, 8, 9, 12, 15, 17, 18, 21, 29, 30, 37, 39
	The planning team could be augmented by organizations with an interest in or responsibility for traffic safety, such as schools, MADD, Explorers, tribal court, Youth Council, and ADOT.	No cost

3.1.9 Summary of Coordinating Team Activities for Determining if the Tribal Government has a Highway Safety Problem Modified the Matrix

The teams followed distinct processes to address infrastructure needs and to consider funding sources to carry out the highest priority projects. Table 11 summarizes the actions for each tribe.

	Gila River Indian Community	Hualapai Tribe	Tohono O’odham Nation
Identifying Safety Issues	1. The planning team brainstormed traffic safety issues.	1. The planning team brainstormed traffic safety issues.	1. The planning team brainstormed traffic safety issues.
	2. The research team performed a preliminary crash analysis.	2. The research team performed a preliminary crash analysis.	2. The research team performed a preliminary crash analysis.
	3. The planning team selected a data management system project.	3. The planning team selected and prioritized four issues.	3. The planner recommended an intersection improvement project.
	4. GIS/CAD project coincided with a data project previously approved by the Tribal Council.	4. The planning team selected an occupant protection project.	4. The tribal chairwoman approved the intersection improvement project.
		5. Tribal Council approved the project.	5. A RSA team identified the safety issues for the selected intersection.
Addressing Infrastructure Needs	1. The planning team will assist to carry out the scope of work identified in the request for proposal (RFP) once the Tribal Council approves funding.	1. The team leader planned detailed tasks to implement the occupant protection project, including the identification of the infrastructure needs, project training and establishing a traffic safety officer position.	1. The implementation team identified the need for an effective traffic safety communications network.
	2. The planning team will determine the infrastructure needs after the Tribal Council approves the funding for the system acquisition.		2. ADOT and BIA as owners of the intersecting roads maintained the technical infrastructure capacity.

Table 11 continued			
Team Activities Regarding Safety Issues, Infrastructure and Funding			
	Gila River Indian Community	Hualapai Tribe	Tohono O'odham Nation
Considering Funding Sources	1. The planning team will provide funding support in data collection, data analyst services, training, or some other activity associated with the installation of the software package.	1. The research team developed a list of potential funding sources for each of the identified traffic safety issues.	1. The implementation team identified ADOT and BIA Papago Agency as potential funding sources for the low cost improvements.
	2. The planning team will determine the sources of funding support after Tribal Council approval of system acquisition funding.	2. The IHS, GOHS and ADHS were considered as training resources, such as CPS, SNAP and seat belt observational studies.	2. ADOT and Pima Association of Governments (PAG) were identified as sources for scoping SR 86.
		3. The Tribal PD was identified to fund the start-up activities.	3. The three jurisdictions will determine the sources of funding for the intersection reconstruction project after the Scope of Work is approved.
		4. The GOHS and BIAHSO were considered means to fund the traffic safety officer position.	

3.2 SELECT FUNDING SOURCES TO ADDRESS HIGHWAY SAFETY ISSUES

Before proceeding to develop the project plans, the teams were encouraged to review funding sources. Each team reviewed the funding requirements and selected appropriate sources.

3.2.1 Investigate Potential Funding

The activity was intended to assist each team to identify suitable funding sources for its safety project by 1) Comparing the eligible uses of the potential funding to the goal(s) of the tribal safety project; and 2) Studying the requirements, the levels and availability of

program funds before applying. CDs containing the *Tribal Traffic Safety Funding Guide*^[23] were distributed to each planning team member and, in the case of the Tohono O’odham Nation, the implementation team.

Gila River Indian Community

The planning team decided to investigate supplemental funding sources after the Tribal appropriations process was complete. However, the planning team expressed apprehension about applying to the BIAHSO or the AZ GOHS for federal data improvement funds. Although funding was necessary, the team was concerned that the tribe would be mandated to share with ADOT all crash data, rather than partial data that excludes personal identifiers. Additionally, impacts on tourism and increased insurance rates for tribal citizens were noted.

Hualapai Tribe

The planning team reviewed the AZ GOHS FY2006 State and Community Highway Safety Grant application and submittal guidelines, and agreed to compile an application for intoxicizers and signage. During the team discussion of tasks, the IHS staff organized the tasks and schedule into a work plan to facilitate the completion of the application. However, the tasks were too numerous for the tribe to complete within a month, so an application was not submitted. A year later, the police chief identified the BIAHSO FY2007 State and Community Highway Safety Grant as a funding source for a traffic safety officer to implement the occupant protection project.

Tohono O’odham Nation

RSA Program funds were the means to secure a safety inspection and to identify low and high cost roadway improvements for the intersection of SR 86 and IRR Route 15. The Tohono O’odham Nation, ADOT and the BIA addressed funding to make the actual improvements after the completion of the RSA.

3.2.2 Determine Tribal Actions Necessary to Obtain Safety Funds

Once the teams had weighed the cost of meeting the program requirements against the potential funding benefits and applied for funds, the team leaders followed tribal procedures to acquire advance approval. The police chief for the Hualapai Tribe, the transportation planner for the Gila River Indian Community, and the NRC chairperson and a tribal attorney for the Tohono O’odham Nation advised the research team on the tribal protocols. Each tribe had different protocols for approving projects and funding.

Gila River Indian Community

The tribal departments had previously acquired Tribal Council approval for a data system. However, at the time, the Tribal Council did not appropriate tribal funds to pay for the system. Since the approval of the system was partially completed, the staff discussed preparing an RFP for submittal to the Capital Budgets Committee (CBC). The CBC’s

responsibilities include screening proposals and recommending RFPs to the Tribal Council. The Tribal Council authorizes tribal expenditures and funding applications.

Hualapai Tribe

During a departmental report to the Tribal Council, the police chief relayed project information and sought support to apply for supplemental funding to initiate the occupant protection activities. The BIAHSO was identified as a potential funding source.

Tohono O'odham Nation

The RSA process required the Tohono O'odham Nation, as the requesting jurisdiction, and the road owners to prepare a response to the RSA recommendations. A preliminary step to drafting a response was to determine the rights of way (ROW) in order to resolve the jurisdictional responsibilities. For this project, the land and road owners agreed to a joint response.

3.2.3 Prepare Funding Recommendations

Gila River Indian Community

The planning team participated with the MIS Department to interview prospective software vendors of traffic data collection and management (GIS/CAD) systems. Upon determining the appropriate system, the MIS Department completed the RFP, using the departmental information. Each participating tribal department had provided the MIS department director with a data summary for its existing databases, justifications of needs, and statistics related to the frequency and nature of medical responses to MVCs on the Gila River Indian Reservation. The RFP was submitted to the CBC.

Hualapai Tribe

The police chief solicited aid from the planner to prepare a project justification and grant application for a traffic safety officer position. The planner utilized the preliminary crash analysis to document the tribe's need.

Tohono O'odham Nation

The RSA team recommended low-cost improvements for increasing visibility of the intersection and sight distance, keeping cattle off the roadway, and decreasing speeding. However, major investments were also pointed out for improving narrow shoulders, pavement drop-offs, and increasing use of turn lanes and pedestrian and bicycle facilities. The three jurisdictions all assumed responsibility for portions of the low-cost improvements.

For example, ADOT agreed to placement of the streetlight, provided the Tohono O'odham Nation would furnish the electricity. The NRC initiated discussions with the Tohono O'odham Utility Authority regarding the costs to maintain power to the proposed streetlight. The request will require the approval of the NRC and Legislative Council.

The BIA Papago Agency agreed to inspect and repair the fencing. However, the current level of maintenance funding for the agency was insufficient to pay for the fencing improvements identified in the RSA. The agency requested authority from the NRC to use up to 25 percent of the tribal FY2007 IRR construction allocation to offset the expenditures for the IRR Route 15 improvements and other road maintenance. If endorsed by the NRC, the Tribal Legislative Council will be required to modify the Tohono O'odham Nation Transportation Improvement Program (TIP) for inclusion into the BIA IRR TIP. To address the need for signage and pavement markers on IRR Route 15, the BIA WRO DOT will expand a FY2008 IRR construction project.

The intersection reconstruction requirements were addressed in a scoping study request initially directed to ADOT and then PAG, the metropolitan planning organization (MPO) for Pima County. ADOT had denied payment, so the ADOT Tucson District approached the PAG to include the project scoping in their FY2008-2013 TIP. The minimum reconstruction cost is expected to be several million dollars.

Future funding for the reconstruction could come from sources such as the ADOT Construction Program, the federally funded HSIP, Tohono O'odham Nation's IRR allocation, special Congressional allocations, and innovative financing. Tribal and ADOT action will be required to respond to the scoping study and to determine how to fund the intersection reconstruction.

3.2.4 Decisions on Tribal Coordinating Team Recommendations

Official actions, either by the tribal leaders or the Tribal Councils, finalized the individual team recommendations. Following are the summaries of decisions for each tribe.

Gila River Indian Community

The CBC endorsed the need to expend tribal funds to purchase and implement the management system. The CBC forwarded their recommendation to the Tribal Council for final approval. Approval is pending.

Hualapai Tribe

The chairman approved the grant application and the application was submitted to the BIAHSO for consideration. The tribe was awarded BIA funds to hire a traffic safety officer. The officer has been employed to implement the occupant protection activities.

Tohono O'odham Nation

The tribe, BIA, and ADOT jointly agreed to the recommendations from the RSA team. The PAG Council approved the TIP, which included a project to scope the intersection. Reconstruction funding decisions will conclude after the scoping study is complete.

3.3 PLAN FOR A THSIP OR SAFETY PROJECT

To improve highway safety, tribes may decide to commit to ongoing THSIPs or short-term commitments through the implementation of single safety projects. The primary differences in planning THSIPs or single projects are the extent of integration with other tribal programs and the need for prioritizing multiple safety projects. For the BTTSC project, each planning team implemented an individual project. However, two of the three teams indicated they planned to pursue an on-going traffic safety program.

3.3.1 Prepare Scope-of-work for Development of THSIP or Safety Project

Two of the teams developed detailed scopes of work for their traffic safety projects. The third team scoped one aspect of the project. These scopes of work, which identified work activities, responsible parties and timelines, were of substantial benefit in setting the course and evaluating the progress of each project implementation.

3.3.2 Identify Tribal Traffic Safety Capacity Issues

Early in the project, capacity issues surfaced simultaneously to the identification of the traffic safety issues. Table 12 cross-references the list of capacity issues with the five capacity areas: 1) Decision making; 2) Data collection and storage; 3) Equipment and Software; 4) Project prioritization; and 5) Project development, implementation, and evaluation.

The findings on the traffic safety issues and capacity analysis relate to the current traffic safety capacity of the three tribes. The associated analysis is not a criticism of the tribes. To the contrary, tribes do not have the capacity in large part due to the following reasons.

1. Traffic safety on tribal lands has not been a major thrust of federal and state policies and programs in the past.
2. Federal assistance has not focused on building tribal capacity, but rather on retaining the expertise with the federal agency or turning program responsibilities over to tribes without sufficient structure and resources to build capacity.
3. Federal and state programs are not well coordinated, resulting in fragmented approaches to complex traffic safety issues.

An analysis of the capacity-related issues and capacity topics leads to the following findings.

Decision-making

The tribes did not have decision-making structures that efficiently supported the development of a traffic safety program. Components of a traffic safety program were dispersed among tribal departments, leading to fragmented decision-making. Some traffic safety program components were missing entirely. For the BTTSC project, ad hoc traffic safety planning, and implementation teams were specifically set up by all three tribes to initiate a project. In some instances, tribal laws have not provided a basis for traffic safety program decision-making.

Data Collection and Storage

There are no integrated traffic safety databases. The traffic safety program components were dispersed among tribal departments and the majority of data were not tribally collected. Traffic safety data were not generally shared among all potential users. The mix of manual and automated databases has resulted in inefficient usage of and inaccessibility to the data.

Equipment and Software

Adequate equipment was not available for those departments collecting traffic records. This was particularly evident where staff manually collected data in the field and reentered the same data in office computer systems. Different tribal departments have used varied software for storing related data, making data integration and sharing difficult.

Project Prioritization

A comprehensive traffic safety program has generally not been established for each of the tribes. Some elements of a traffic safety program, such as occupant protection, and reducing impaired driving, speeding, and other violations, have been started and could be expanded.

Project Development, Implementation and Evaluation

None of the tribes have staff assigned solely to a traffic safety program. Consequently, the BTTSC project tasks were added work for the staff participants, and the tribal capacity was very limited to the specific project development, implementation, and evaluation.

Table 12 Tribal Traffic Safety Capacity Issues					
Traffic Safety Capacity Areas					
Traffic Safety Issue Category	Decision-Making	Data Collection & Storage	Equipment & Software	Project Prioritization	Project Development, Implementation and Evaluation
Data	The data decision-making structure had not been defined.	A comprehensive data collection plan had not been developed.	Automated field data collection equipment was unavailable.	Data project prioritization had not been centralized.	Staffing resources had been minimally committed to data collection and maintenance.
	Data responsibilities had not been dispersed among Departments.	Sufficient data had not been maintained in an automated storage system.	Data collection and storage software systems had not been integrated.		
CPS	Some of the participating tribes had traffic codes pertaining to child (endangerment) passengers, but insufficient resources did not permit adequate enforcement.	Data had not been shared consistently.			
		Usage data had not been collected by the tribes. IHS may be conducting observational seat belt studies for the tribes, but these studies had not captured sufficient child passenger data.			Routine seat belt checkpoints to examine proper use of child restraint systems would help.

Table 12 continued Tribal Traffic Safety Capacity Issues					
Traffic Safety Capacity Areas					
Traffic Safety Issue Category	Decision-Making	Data Collection & Storage	Equipment & Software	Project Prioritization	Project Development, Implementation and Evaluation
Occupant Protection	Primary seat belt laws had not been passed for two of the three tribes.	Usage data were not being collected by the tribes. The IHS may be conducting observational seat belt studies for the tribes, and one tribe had begun an enforcement campaign through checkpoints.		Community educational programs for tribal members are needed. The STOP Coalition was providing an educational program.	The tribal code did not facilitate enforcement. The Tohono O'odham Nation has a traffic code. The issues for the three participating tribes need continuous and sufficient resources and staff to adequately cover the vast and isolated land areas.
Impaired Driving			There was insufficient equipment to conduct sobriety checkpoints and to make effective DUI stops.		There was insufficient staff to effectively administer an impaired driving program.

Table 12 continued Tribal Traffic Safety Capacity Issues					
Traffic Safety Capacity Areas					
Traffic Safety Issue Category	Decision-Making	Data Collection & Storage	Equipment & Software	Project Prioritization	Project Development, Implementation and Evaluation
Hazardous Roadways	<p>The decision-making structure for highway safety improvements was undefined.</p> <p>Roadway improvement projects were not identified or prioritized based on roadway or traffic data, either by a transportation or public works department or transportation oversight committees. There were no transportation organizations.</p>	<p>Hazardous roadway data were not being collected on a systematic basis.</p> <p>Roadway information pertaining to roads on tribal lands was collected primarily by consultants or other transportation agencies i.e. municipality, county, ADOT, BIA.</p>	<p>Equipment or software to identify and evaluate hazardous roadway issues was non-existent.</p>	<p>Highway safety programs were non-existent.</p>	<p>Number of staff was insufficient to administer an effective transportation program.</p>
Training	<p>Training decision-making was dispersed among departments.</p>	<p>Safety training databases were non-existent.</p>		<p>Comprehensive safety training was not a priority.</p>	

Table 12 continued Tribal Traffic Safety Capacity Issues						
Traffic Safety Capacity Areas						
Traffic Safety Issue Category	Decision-Making	Data Collection & Storage	Equipment & Software	Project Prioritization	Project Development, Implementation and Evaluation	
Pedestrians & Bicycles	The decision-making structure for pedestrian and bicycle safety was undefined.	There was no evidence of a pedestrian or bicycle safety database.		MVCs involving pedestrians were a recognized problem, but had not achieved priority status.	There was insufficient staff to administer an effective pedestrian and bicycle program.	
EMS	The decision-making structure for EMS was separate from other traffic safety decision-making.	EMS data were not integrated with other roadway safety databases.	Field entry equipment for EMS data was not available.		Insufficient tribal mapping or address systems hindered timely EMS responses.	
			Extrication tools were not readily available.			
Citations		There was a mix of manual and automated EMS data storage.	Some data storage software used was not tailored to EMS reporting requirements.			
			Detention facilities were inadequate.	Traffic safety was not a priority use of court fines.		
Other				Traffic safety had not been a tribal priority.	Funding was insufficient to implement a comprehensive traffic safety program.	

3.3.3 Identify Methods to Build Tribal Traffic Safety Capacity

Identifying specific methods and support sources that can assist the participating tribes to develop their tribal traffic safety capacity was essential for implementing a viable traffic safety project. The approach taken was to identify capacity building methods and sources of support for implementing those methods that could be used by the tribes participating in this project. It is also important for the capacity building methods and sources of support identified to have application for other tribes as well.

3.3.4 Develop Plan for Tribal Traffic Safety Capacity to Support the THSIP or Safety Project

Each tribe selected a different type of project, resulting in different infrastructure capacity-building requirements. Finally, at the completion of the project research phase, the tribes were at different stages of project implementation and capacity building. Following is a summary of the diverse, but viable planning approaches for capacity building.

Gila River Indian Community

The data project plan proposed to utilize the MIS Department to acquire and administer the software, and to provide the bridge for tribal departments to access information in the GIS/CAD system. Further, the plan called for each department to identify its own resource and training requirements necessary for active support and to use the GIS/CAD system. The team plans to continue to monitor and provide direction for the GIS/CAD system, which had the potential to become an effective traffic safety tool.

Hualapai Tribe

The capacity-building plan emphasized training of existing staff and community members, establishing uniform procedures, and creating a lead traffic safety staff person position to ensure that tribal traffic safety receives ongoing attention. The tribe also made use of the IHS and ADHS as external support sources to provide training to the Hualapai tribal staff and community members. The tribe was able to fill its lead traffic safety staff person position with funding from another external support source – the BIAHSO.

Tohono O'odham Nation

Capacity building for the project involved establishing a structure and methodology to assist the three jurisdictions to jointly resolve the traffic safety issues at the intersection. No formal plans for project implementation or for tribal capacity building were developed. However, several capacity-building results were achieved.

- An effective tribal traffic safety communications network was established involving several Tribal Legislative Council committees and executive departments.
- An effective methodology to examine a hazardous roadway was pursued. In this case, RSA resources were solicited and made available to the tribe at no cost.
- An effective communications program that led to consensus on actions to improve the intersection's safety was established with the land and the road owners.

- Existing resource capacity, necessary to carry out many of the identified intersection safety improvements, was identified.

3.3.5 Solicit Funding for Developing THSIP and Implementing Tribal Traffic Safety Capacity

Funding for the projects was addressed previously in section 3.2.3 of this report.

3.3.6 Develop a Plan for the THSIP or Safety Project

Planning was an essential task to implement either a THSIP or safety project. A plan:

- 1) Outlines how the program/project will be organized;
- 2) Defines the relationship(s) with other tribal programs;
- 3) Identifies the needed resources to build capacity;
- 4) Defines the roles and responsibilities;
- 5) Schedules the implementation activities; and
- 6) Associates costs and funding sources for implementation.

The planning approaches were customized to meet the needs of and protocols for each tribe. When appropriate, state and federal procedures were abided by. The tribal formal or informal work plans tended to focus on organization, relationships, roles and responsibilities, and scheduling. However, the tribes were mindful of the future outlay activities involving resources, associated costs, and funding sources. Resource planning and budgeting will become considerations as the tribal safety activities increase.

Gila River Indian Community

The transportation planner referred to the SPR 592 Work Plan and the TAP to guide the major activities of the planning team. A series of meetings were convened to discuss the project selection and requisition of funds. To prepare for the data project, tribal procedures regarding equipment and software selection and procurement were observed.

Subsequent to developing the data project work plan, the planning team decided to ask the MIS department director to share the status of the GIS/CAD System development effort. A community-wide GIS/CAD database has been non-existent. A plan for an overall MIS, including five separate projects, is in existence. The GIS and CAD systems were two of the five proposed projects.

The planning team agreed to support the MIS Department in securing the GIS and CAD systems, which would be housed in the MIS Department. Placing the systems in the MIS Department will reduce the need for personnel capacity building in other departments. Three software systems were identified as having potential for meeting the SMS needs of the EMS, police, fire, courts, corrections, juvenile, health, transportation, and MIS departments. The estimated cost for establishing the data system capacity is between \$1.2 million and \$1.3 million. The capacity building plan included submitting the project through the established tribal capital projects approval process.

A data project work plan was developed to assist the implementation of a SMS. The work plan included the following steps aimed at building the tribe's infrastructure capacity for implementing a SMS.

- Determine which departments should be participants in a community-wide SMS.
- Establish a SMS concept committee.
- Identify alternative concepts for the structure of a GIS department.
- Identify alternative capacity-building strategies for implementing a SMS.
- Estimate the cost for implementing a community-wide SMS.
- Identify potential funding sources and levels for implementing a SMS.
- Identify alternative manual, hardware, and software methods for making PD data available to other departments on an interim basis.
- Identify alternative capacity-building strategies that will support the identified alternative methods.
- Identify potential funding sources and levels for making PD data available to other departments on an interim basis.
- Obtain funding required for plan implementation.
- Build tribal capacity to implement plan and sustain the SMS.

Hualapai Tribe

The police chief, as lead for the project, assumed the responsibility for the development of a detailed work plan, once the planning team had prioritized occupant protection as the number one safety issue. Through a series of meetings between the police chief and the research team, the initial work plan transformed from an outline of steps for developing a work plan to a quarterly matrix with two measurable goals and six objectives. Each objective described had a desired outcome and identified the tasks, the responsible party, and projected monthly completions. The plan was structured by quarters, so the months on the plan could be changed when updates became necessary. The plan would also serve the police chief to schedule officer duties and to prepare monthly summary reports. The police chief anticipated that the PD, initiated by the traffic safety officer, would devise similar work plans for the remaining three safety issues.

- Obtain training from IHS for five police officers, two EMS staff, and five community members to conduct observational seatbelt studies.
- Acquire the SNAP training from IHS for the police, social services, and health departmental staff and community volunteers.
- Certify CPS technicians through the IHS, AZ GOHS, or Safekids programs.
- Obtain funding, flyers, and posters to conduct an occupant restraint usage campaign.
- Conduct community workshops to determine community safety priorities.

- Obtain or develop procedures, report forms, supplies, and equipment necessary to conduct sobriety checkpoints.
- Select and train officers, staff, and volunteers to conduct sobriety checkpoints.
- Determine CPS seat objectives and procedures to be incorporated into traffic enforcement detail.
- Develop a strategy and plan for building ongoing tribal capacity to increase occupant restraint usage and to maintain occupant restraint usage at a high level, based on evaluation of an occupant restraint usage campaign and checkpoint program.
- Establish a traffic safety officer position in the PD to administer an ongoing occupant restraint program and to develop a traffic safety program that addresses the issues identified during the BTTC project.

Tohono O'odham Nation

In lieu of an action plan, the tribal planner, with guidance from the research team, prepared for and conducted a series of meetings with the NRC and/or the implementation team to discuss and act on the related activities. A detailed work plan devised for the planner was updated periodically to coordinate the meeting tasks with the research team.

The roadway project involved intersecting state and federal routes. To successfully complete the initial planning activities, the planner and the research team considered the complex coordination, as well as the adherence to tribal, state, and federal procedures. The planner sought advice on governmental protocol from members of the NRC and the Executive Office, and legal counsel from the Tribal Office of the Attorney General.

The RSA team adhered to the FHWA procedures to audit the SR 86 and IRR Route 15 intersection. The procedures were to: 1) Identify the road(s) to audit and the audit team; 2) Conduct the audit and report the findings; and 3) Follow up on the findings.

Identify the hazardous road location and RSA team members

The intersection was identified as a high crash location during the preliminary crash analysis. The Tribal Planning Department prioritized the intersection as the first roadway needing safety improvements.

The intent of the RSA was an independent examination of the roadway safety performance by a team that did not have a vested interest in or was not familiar with the location. Three attempts were made to recruit a RSA team:

- 1) The research team and the tribal planner identified staff familiar with tribal transportation, which included maintenance staff from the BIA Fort Apache Agency and an engineer employed by another tribe participating in the BTTC project. However, funding to support their travel was not available through ADOT, since the RSA program had not yet been established.

- 2) The research team and ADOT Traffic Engineering staff inquired about utilizing the FHWA-sponsored peer exchange program to recruit a non-ADOT affiliated staff person and none of the five staff were available to participate.
- 3) The tribe, the research team, and ADOT agreed to a four-member audit team comprised of members from ADOT Traffic Engineering, the FHWA, and the BIA WRO DOT.

Conduct the audit and report the findings

In advance of the RSA, two additional activities were organized to advance the audit: 1) The research team, ADOT, and FHWA staff customized a one-day RSA workshop, for November 6, 2006, to prepare the NRC and district leadership, and departmental staff for the audit; and 2) On November 19, 2006, the RSA team leader and the tribal planner attended a Covered Wells community meeting to gain insight on their issues with the intersection.

The audit was conducted during November 27-28, 2006. The RSA team interviewed administrative staff to acquire additional intersection issues, reviewed pertinent data, examined the site during daylight and nighttime conditions, summarized the findings, and reviewed the findings with the road and land owners.

The RSA team leader presented the final report before the implementation team on December 11, 2006. The RSA team had set a due date of January 22, 2007, to receive the jurisdictional responses to the recommended improvements. ADOT, BIA, and the tribe agreed to prepare a joint response. They met on January 3, 2007, to discuss the draft joint response. ADOT prepared the draft response, revised it according to the solicited comments, and acquired approval from the ADOT Tucson district engineer, the BIA WRO director, and the tribal chairwoman.

Follow-up on the findings

The NRC met twice with the research team to organize its response responsibilities. The tribal planner coordinated the follow-up activities with the executive office, the Gu-Achi District leadership, the BIA Papago Agency, the BIA WRO DOT, the PD, and the STOP Coalition.

3.3.7 Obtain Tribal Administrative Approval for Implementing the THSIP or Project

To assist each tribe to transition from project planning to project implementation, the research team advised the tribal teams to apprise the elected officials and/or oversight committees of the safety issues and the project planning activities, and recruit a Tribal Council member for both the planning and implementation teams. These methods assisted each team to reiterate to the tribal leaders the importance of traffic safety and the preliminary crash analyses, and to secure their approval to proceed. Each approval protocol varied.

Gila River Indian Community

The transportation planner provided status reports to the tribal governor. The planning team agreed to implement a traffic safety data project with particular emphasis on data collected by the PD. The planning team contacted the tribal MIS Department director to discuss the project. From these discussions, the team decided to proceed with a data management project that will feature a community-wide CAD/GIS software bridge to provide accessibility to the data users. The planning team in cooperation with the MIS department director prepared a RFP for project funding and implementation that will be submitted to the CBC and the Tribal Council for approval.

Hualapai Tribe

The police chief and the assistant chief presented the safety project to the Tribal Council and requested approval to submit an application to the BIAHSO for funds to hire a traffic safety officer. They explained the data to support their application was derived from the BTTSC project. To implement the safety project, the police chief relayed that the police staff would continue to develop the implementation plan with the research team, so a plan addressing the four goals (increased occupant protection, reduced speeding, reduction in impaired driving and improvement of a hazardous roadway intersection at SR 66 and the IRR Route 1) would be available for the PD.

Tohono O'odham Nation

By letter, the tribal chairwoman was requested to approve a roadway project identified by the Planning Department. The chairwoman informed the Planning Department of her approval to implement an intersection improvement project before the establishment of the implementation team.

To organize the tribal representation on the implementation team, the tribal planner requested the NRC to participate with the chair and vice-chair from the Gu Achi District and the departmental staff.

After the completion of the RSA, the NRC, with concurrence from the vice-chair of the NRC and the office of the attorney general, led the negotiations with ADOT and the BIA. The planner apprised the chairwoman of the RSA report, and the negotiations and development of a joint response to the RSA. As part of the RSA process, the road owners were requested by the RSA team to submit a written response to the RSA program manager addressing each recommendation for improvement. The chairwoman, along with the ADOT district engineer and the BIA regional director, were asked to concur with the improvements by signing the joint response.

According to the joint response, all three jurisdictions shared responsibility for the improvements. The PD agreed to provide speeding and parking enforcement to improve safety near the intersection of SR 86 and IRR Route 15. In addition, the NRC were asked by the BIA Papago Agency superintendent to approve the use of the tribal IRR

construction allocation to help the BIA Papago Agency maintain the IRR routes on the reservations, including the IRR Route 15 improvements near the project intersection.

3.3.8 Establish an Implementation Team

Depending on the nature of the safety project, each planning team was established to initiate the process for the BTTSC project and assess the safety issues. Potentially, each planning team could have assigned the project implementation to a new set of decision-makers.

Gila River Indian Community

The transportation planner anticipated that once the appropriations, and equipment and software procurement were finalized, the MIS Department in cooperation with the tribal emergency response staff from the EMS, the fire department, and the PD would be responsible for the implementation of the data system.

Hualapai Tribe

The police chief anticipated the implementation of the safety goals and objectives would become the responsibility of the traffic safety officer for the Hualapai PD.

Tohono O'odham Nation

The tribal planner invited representatives of the road owners, ADOT, and the BIA to participate with the NRC, which has oversight of transportation issues, leadership from the Gu Achi District, where the intersection is located, and departmental staff from the police and planning departments to be members of the implementation team. The team was established to provide advisement during the RSA, improvement negotiations, funding identification, and the roadway improvement process.

3.4 DEVELOP TRIBAL TRAFFIC SAFETY CAPACITY TO IMPLEMENT A THSIP OR SAFETY PROJECT

3.4.1 Develop Tribal Traffic Safety Capacity and Secure THSIP or Project Funding

The tribal departments and their partners, including the research team, coordinated their in-kind services to support the initial planning stages. Each project required implementation funds from external sources, so the teams made funding recommendations to the tribal leadership.

Gila River Indian Community

The primary method for traffic safety capacity building was the creation of the planning team. The team's intended function was to support a sustainable THSIP by 1) Focusing attention on the need to expand the collection and analyses of traffic records; 2) Justifying a management system; and 3) Advocating for tribal funding to purchase and install the system.

Hualapai Tribe

Tribal capacity for implementing an occupant protection program was enhanced through internal coordination and outreach to external agencies for technical and financial resources. The capacity for carrying out an ongoing tribal traffic safety program was enhanced by the establishment of a traffic safety officer position in the Hualapai PD.

Tohono O'odham Nation

Two safety projects were initiated: 1) Increased use of vehicle occupant protection and 2) Improvement of a road intersection. The capacity to increase the use of vehicle occupant protection was accomplished through the passage of a tribal primary seat belt law. The Tohono O'odham PD has enforced the law with support from the STOP Coalition, which has been providing the educational and evaluation components.

The capacity to increase the intersection safety was accomplished through a partnering effort involving the tribe, BIA WRO DOT, BIA Papago Agency, and ADOT. The short-term minor intersection improvements were funded and provided by BIA WRO DOT, ADOT, and the tribe. The capacity to carry out a long-term project for reconstructing the intersection was initiated by the ADOT Tucson District with funding from PAG. ADOT Tucson District prepared the scoping request, which ADOT estimated as \$2-3 million. Since the amount was more than the ADOT Tucson District had available, the district appealed to PAG to fund the scoping project. PAG approved the project as part of its TIP. The scoping project has been estimated to take 12 to 14 months to complete. The funding and timing for the reconstruction project will be worked out once the scoping results are finalized. FY2012 or 2013 could potentially be the scheduled year for reconstruction.

3.4.2 Implement and Evaluate the THSIP or Safety Project According to the Plan

The Hualapai Tribe and Tohono O'odham Nation had begun the implementation of their traffic safety projects and programs. However, at the TAP deadline, both projects were in progress and had not been evaluated. The Gila River Indian Community planning team was awaiting funding approval to purchase and implement the the software.

Hualapai Tribe

The tribe, with assistance from the IHS, identified several locations to conduct ongoing observational seat belt studies. The goal was to conduct 27 observational surveys prior to beginning the occupant protection campaign and checkpoint enforcement program. For evaluation purposes, pre- and post-project seatbelt usage can be compared by overall percentage and percentage by age and gender; MVC injury and fatality rates can be derived using the population statistics and the total MVC reports, as well as traffic stop reports. The traffic safety officer position was recently filled, so an evaluation has not been concluded. The traffic safety officer will be helping the tribe to reduce the MVC rate and traffic violations for speeding, DUI, and failure to use vehicle seat belts.

Tohono O'odham Nation

Implementation of the intersection improvement project began by addressing the low-cost improvement recommendations to increase the sight distance. Speed and no-parking enforcement in the vicinity of the intersection was increased. Improved intersection signing and markings on the IRR Route 15 will become a FY2008 project. Intersection reconstruction is not expected to start for several years. Implementation of the intersection improvements is expected to lead to reduced MVC rates and severity.

4.0 DEVELOP METHOD RECOMMENDATIONS FOR TRIBAL TRAFFIC SAFETY CAPACITY TO BE CONSIDERED DURING THSIP IMPLEMENTATION

4.1 INTRODUCTION

The purpose of Task 4 was to provide a guide consisting of methods that can be applied by tribes to develop traffic safety capacity for implementing THSIPs. The guide, based on the experience working with the three tribes, is presented in Table 13:

- Lists prospective approaches according to the five capacity-building areas: decision-making; data collection and storage; equipment and software; project prioritization; and project development, implementation, and evaluation. The list of methods is not exhaustive, but presents sound approaches that can be done independently or in combination.
- Cross-references the capacity-building methods with the program **categories**: program initiation, program organization, program staffing, training, resources, and other actions.
 - Program initiation refers to the startup activities, such as determining whether a traffic safety problem exists; identifying initial program leadership; determining potential funding sources; and beginning the identification of data sources and software capabilities to address safety issues.
 - Program organization entails
 - 1) Establishing: the formal structure for a) traffic safety leadership and b) decision making;
 - 2) Traffic safety systems for a) data collection, b) data storage, and c) project prioritization; and
 - 3) Processes for project development, implementation, and evaluation; and
 - 4) Acquiring needed equipment and software.
 - Program staffing involves determinations and actions for building internal staff capacity versus relying on external resources for carrying out the tribal traffic safety program.
 - Training involves strategies for achieving current and future staff capacity skills within the five capacity building areas.
 - Resources relates to obtaining the necessary means to build traffic safety capacity for the tribes.
 - Other actions refers to the use of policy, management and analysis tools that are available to assist in building traffic safety capacity.
- Associates potential internal and external sources of participation or support with the implementation of each identified capacity building method. Potential sources within the tribe have been identified for methods calling for internal action.

Potential sources, external to the tribe, have been identified (in no particular order) for methods that may require outside expertise.

o Internal Sources

- o Tribal leader
- o Tribal Council
- o Tribal oversight committees, such as traffic safety, natural resources, transportation, health, public safety, and domestic
- o Tribal administrative directors, such as tribal administrator and department heads
- o Tribal departmental staff, such as transportation, public works, planning, fire, law enforcement, health, emergency medical services, safety, justice, and information management
- o Tribal traffic safety program manager

o External Sources

- o BIA
- o IHS
- o Arizona Department of Transportation
- o GOHS
- o FHWA
- o Tribal organization - an association or consortium of tribes
- o Consultant
- o Arizona Department of Health

4.2 USING THE GUIDE

- The un-shaded rows list alternative tribal traffic safety capacity building methods. The shaded rows identify potential sources of internal and external participation or support for implementing the identified methods listed above.
- The left-hand column identifies the program **category**, e.g. program initiation and resources, to which the capacity-building methods are assigned.
- The remaining five columns are assigned to the five capacity-building **areas**, e.g. decision making and project prioritization.
- Each capacity-building method entry relates to the category entry in that row and capacity-building area in that column, but there is no relationship to the other columns entries in that row.
- In many cases more than one method has been identified for a specific category and topic. Consequently, there are multiple rows for each category where more than one method has been identified for at least one of the topics.
- The rows are numbered for each category, providing a reference for determining the number of alternative methods identified for each capacity-building area.

**Table 13
Methods that Can Assist Tribes to Build Traffic Safety Capacity**

Traffic Safety Capacity Areas					
Capacity Methods Categories	Decision-making	Data Collection and Storage	Equipment and Software	Project Prioritization	Project Development, Implementation and Evaluation
Program Initiation 1	Conduct an internal traffic safety review to determine the significance of traffic safety for the tribe.	Conduct an internal assessment to determine who is collecting tribal traffic safety data, what data are being collected; how the data are collected and stored; and who needs and uses the data.	Inventory equipment and software being used and needed by tribal departments and government sub-jurisdictions (e.g. districts or chapters) to facilitate a tribal traffic safety program.	Request a MVC fatality and injury report, identifying MVC locations and probable causes for fatalities and injuries. Solicit external assistance to acquire the data from outside agencies.	
Potential Sources	Tribal directors Tribal departments	Tribal directors Tribal departments	Tribal directors Tribal departments	IHS BIA ADOT Arizona Department of Health Tribal departments Tribal organizations	

**Table 13 continued
Methods that Can Assist Tribes to Build Traffic Safety Capacity**

Traffic Safety Capacity Areas					
Capacity Methods Categories	Decision-making	Data Collection and Storage	Equipment and Software	Project Prioritization	Project Development, Implementation and Evaluation
Project Initiation 2	Solicit outside expertise to present the significance and the components of a tribal traffic safety program.	Solicit outside expertise to review and report on what entities are collecting tribal traffic safety data; what data are being collected; how the data are collected and stored; and which entities need and use the data.	Solicit outside expertise to inventory equipment and software being used and needed by tribal departments and government sub-jurisdictions (e.g. districts or chapters) to facilitate a tribal traffic safety program.	Solicit outside expertise to complete a MVC fatality and injury analysis and report, identifying MVC locations and probable causes for fatalities and injuries.	
Potential Sources	IHS BIA Tribal organization Consultant GOHS ADOT Arizona Department of Health	IHS BIA Tribal organization Consultant	IHS BIA Tribal organization Consultant	IHS BIA Tribal organization Consultant	

Table 13 continued Methods that Can Assist Tribes to Build Traffic Safety Capacity					
Traffic Safety Capacity Areas					
Capacity Methods Categories	Decision-making	Data Collection and Storage	Equipment and Software	Project Prioritization	Project Development, Implementation and Evaluation
Project Initiation 3	Identify which department and administrative staff could lead the traffic safety activities. Tribal leader Tribal directors Tribal departments	Identify the collectors and maintainers of traffic safety data. Tribal directors Tribal departments IHS BIA Tribal organization Consultant	Identify appropriate equipment and software. Tribal directors Tribal departments IHS BIA Tribal organization Consultant	Identify the traffic safety issues by reviewing the MVC report results. Tribal directors Tribal departments IHS BIA Tribal organization Consultant	
Potential Sources					
Project Initiation 4	Assign a lead person to initiate the coordination of the tribal traffic safety activities. Tribal leader Tribal directors Tribal departments		Assess the compatibility of traffic safety-related software in use by tribal departments and government sub-jurisdictions. Tribal directors Tribal departments IHS BIA Tribal organization Consultant	Use the MVC report results to prioritize the traffic safety issues. Tribal directors	
Potential Sources					

**Table 13 continued
Methods that Can Assist Tribes to Build Traffic Safety Capacity**

Traffic Safety Capacity Areas					
Methods Categories	Decision-making	Data Collection and Storage	Equipment and Software	Project Prioritization	Project Development, Implementation and Evaluation
Program Initiation 5	Commit to using traffic safety data as the foundation for developing the tribal traffic safety program Tribal directors		Select appropriate equipment and software.		
Potential Sources	Tribal directors		Tribal directors Tribal Departments		
Program Organization 1	Establish an oversight committee or utilize an existing committee.	Develop an integrated traffic safety data collection and management process.	Utilize the procurement process to acquire equipment and software.	Establish a project prioritization process to be used for the traffic safety program.	Establish a project development, implementation and evaluation process to be used for the traffic safety program.
Potential Sources	Tribal directors Tribal committees	Tribal directors Tribal departments	Tribal directors	Tribal directors Tribal committees	Tribal directors Tribal committees
Program Organization 2	Oversee the traffic safety program development and implementation. Make recommendations to tribal leadership.	Oversee the coordination of data collection and management.	Oversee the selection and acquisition of equipment and software.	Oversee the issue(s) prioritization process.	
Potential Sources	Tribal committees Tribal directors Tribal departments	Tribal committees Tribal directors Tribal departments	Tribal committees Tribal directors Tribal departments	Tribal committees Tribal directors Tribal departments	

**Table 13 continued
Methods that Can Assist Tribes to Build Traffic Safety Capacity**

Traffic Safety Capacity Areas					
Methods Categories	Decision-making	Data Collection and Storage	Equipment and Software	Project Prioritization	Project Development, Implementation and Evaluation
Program Organization 3	Establish a tribal traffic safety program manager position that would be responsible for program development and implementation and making recommendations to a tribal traffic safety program committee or tribal leadership.	Assign the tribal traffic safety program manager the responsibility to oversee the development of an integrated traffic safety data collection and management program.	Assign the tribal traffic safety program manager the responsibility to oversee the selection and acquisition of equipment and software that will provide for an effective and efficient tribal traffic safety program.	Clarify the relationship between the model used to prioritize traffic safety projects and the IRR TIP or priority list requirements.	Solicit assistance from agencies already operating traffic safety programs or with traffic safety program expertise to help organize a tribal traffic safety program.
Potential Sources	Tribal directors Tribal departments	Tribal Leader Tribal directors	Tribal Leader Tribal directors	Tribal traffic safety program manager Tribal directors Tribal departments Tribal traffic safety committee	IHS BIA Other tribes Tribal organization ADOT GOHS

**Table 13 continued
Methods that Can Assist Tribes to Build Traffic Safety Capacity**

Traffic Safety Capacity Areas					
Methods Categories	Decision-making	Data Collection and Storage	Equipment and Software	Project Prioritization	Project Development, Implementation and Evaluation
Program Organization 4	Establish definitive lines of decision-making for traffic safety issues.	Establish a data manager position to develop an integrated data collection and management program.	Assign the data manager to assist in the selection and acquisition of data-related equipment and software.	Review the IRR Program priority setting process to assure that traffic safety is a priority.	Establish a transportation or safety department with traffic safety as a major program priority.
Potential Sources	Tribal Leader Tribal directors Tribal departments Tribal traffic safety program manager	Tribal directors Tribal departments	Tribal directors Tribal departments Tribal data manager	Tribal departments Tribal traffic safety program manager Tribal committees	Tribal leader Departmental reorganization New staff Tribal organization
Program Organization 5	Clarify roles for tribal departments involved in traffic safety.	Solicit outside expertise to develop an integrated tribal traffic safety data collection and management program.	Solicit outside expertise to assist in the selection and acquisition of equipment and software that will provide for an effective and efficient traffic safety program.		
Potential Sources	Tribal Leader Tribal directors	IHS BIA Tribal organization Consultant ADOT GOHS	IHS BIA Tribal organization Consultant ADOT GOHS		

**Table 13 continued
Methods that Can Assist Tribes to Build Traffic Safety Capacity
Traffic Safety Capacity Areas**

Methods Categories	Decision-making	Data Collection and Storage	Equipment and Software	Project Prioritization	Project Development, Implementation and Evaluation
Program Staffing 1	Determine the level to which Tribal employees vs. external expertise will be used to administer and implement the traffic safety program. Tribal Leader Tribal directors Tribal traffic safety program manager	Appoint Tribal staff to carry out the traffic safety data collection and management responsibilities in each department involved with traffic safety. Tribal directors Tribal departments	Appoint Tribal staff to make equipment and software recommendations, acquisitions and implementation in cooperation with departments. Tribal directors Tribal traffic safety program manager Tribal departments	Appoint a Tribal staff to be responsible for the development of transportation-related project prioritization documents. Tribal directors Tribal traffic safety program manager Tribal departments	Determine staffing requirements to develop, implement and evaluate the Tribal traffic safety program on a continuing basis. Tribal Leader Tribal directors Tribal traffic safety program manager Consultant
Program Staffing 2		Contract technical assistance to carry out the traffic safety data collection and management responsibilities in each department involved with traffic safety. IHS BIA Tribal organization Consultant ADOT		Obtain technical assistance to assist with project prioritization. IHS BIA Tribal organization Consultant ADOT GOHS	Perform project development, implementation and evaluation with Tribal staff. Tribal directors Tribal traffic safety program manager Tribal departments
Potential Sources					

**Table 13 continued
Methods that Can Assist Tribes to Build Traffic Safety Capacity**

Traffic Safety Capacity Areas					
Methods Categories	Decision-making	Data Collection and Storage	Equipment and Software	Project Prioritization	Project Development, Implementation and Evaluation
Program Staffing 3					Contract technical assistance from external agencies. IHS BIA Tribal organization Consultant ADOT
Potential Sources					
Training 1	Obtain traffic safety program management training from an agency with safety program expertise.	Obtain safety data collection and management training from agencies with safety data collection and management expertise.	Obtain equipment and software training for safety equipment and software currently being used by those agencies.	Obtain project prioritization and transportation planning training from agencies.	Attend project development, implementation and evaluation workshops, conferences and courses.
Potential Sources	IHS BIA Tribal organization Consultant ADOT GOHS Local governments with safety programs FHWA NHTSA	IHS BIA Tribal organization Consultants ADOT Local governments with safety programs GOHS FHWA NHTSA State MVC records office	BIA ADOT NHTSA	IHS BIA Tribal organization Consultant ADOT FHWA NHTSA	Tribal traffic safety program manager Tribal departments

**Table 13 continued
Methods that Can Assist Tribes to Build Traffic Safety Capacity**

Traffic Safety Capacity Areas						
Methods Categories	Decision-making	Data Collection and Storage	Equipment and Software	Project Prioritization	Project Development, Implementation and Evaluation	
Training 2			Obtain vendor training.		Participate in staff exchange or peer programs.	
Potential Sources			Equipment and software vendors		IHS	
					BIA	
Potential Sources					Tribal organization	
					ADOT	
					GOHS	
					Local governments with safety programs	
					FHWA	
					NHTSA	
					State MVC records office	
Training 3					Sponsor college education for high school graduates with promise for careers in engineering, planning, public health, injury prevention, epidemiology and construction.	
Potential Sources					Tribal students in reservation and off-reservation schools; Non-tribal students	

**Table 13 continued
Methods that Can Assist Tribes to Build Traffic Safety Capacity**

Traffic Safety Capacity Areas						
Methods Categories	Decision-making	Data Collection and Storage	Equipment and Software	Project Prioritization	Project Development, Implementation and Evaluation	
Resources 1	Use tribal allocations/funds to leverage funds from other sources.	Research potential funding sources.	Research potential funding sources.	Research potential funding sources.	Research potential funding sources.	
Potential Sources	IRR Program funds Tribal funds	<i>Tribal Traffic Safety Funding Guide</i> www.grants.gov Federal Register				
Resources 2	Create transportation or general funding grant writer position.					
Potential Sources	Tribal leader Tribal directors Tribal departments New hire					
Resources 3	Utilize tribal organization or consortium to assist tribe in identifying funding sources.					
Potential Sources	Tribal organization					

**Table 13 continued
Methods that Can Assist Tribes to Build Traffic Safety Capacity**

Traffic Safety Capacity Areas					
Methods Categories	Decision-making	Data Collection and Storage	Equipment and Software	Project Prioritization	Project Development, Implementation and Evaluation
Other Actions	Promulgate laws, such as primary seat belt, DUI, and rules of the road that will assist in the implementation and enforcement of traffic safety initiatives and projects. Tribal Council	Develop a tribal SMS.			Utilize RSA Program.
Potential Sources		IHS BIA Tribal organization Consultant Tribal departments Tribal traffic safety program manager			BIA GOHS Tribal organization Other tribes Consultant ADOT Local governments FHWA

5.0 MODIFY TRIBAL TRAFFIC SAFETY MODEL AND GUIDELINES

Based on the field experience of assisting the three tribes, the research team had planned to revise sections of the *Tribal Traffic Safety Model and Guidelines*^[21] to improve the process and guidance. The original model and guidelines had been created by the research team as a tribal resource for developing a THSIP. A THSIP is a process to comprehensively address traffic safety and involves coalition building, data management, program planning; and, implementation and evaluation.

This activity involved analyzing each of the four tasks of the model process (Table 14) and each of the nine component guidelines (Table 15). The results of the analysis are recommendations for either retaining or modifying the Model and Guidelines in their present form. Tables 14 and 15 list each model task and guideline component and associated page numbers in the original document, accompanied by the analysis and proposed modifications.

Several tribal approaches to traffic safety were conducted during the research process. However, only one of three projects focused on a hazardous roadway and would qualify for the HSIP funding, formerly called HES, for which the model and guidelines were originally developed.

Recognizing that many tribal traffic safety projects will not meet the HSIP eligibility criteria, the Model and Guidelines could be broadened to incorporate all types of highway safety improvement projects. **Consequently, one overriding recommendation is to broaden, under a separate project, the *Tribal Traffic Safety Model and Guidelines*^[21] document to encompass all types of tribal traffic safety improvement projects.**

MODEL PROCESS TASK 1: Determine whether a tribe has a highway safety problem

Table 14 Analysis and Recommendations	
Activity & Page	Analysis
THSIP Team Is Appointed (9)	<p>Tribal leaders, in lieu of the tribal councils, designated the team leader for the three tribes participating in SPR 592. To assist with the establishment of planning committees, the research team provided the team leaders with a list of potential team members. The team leader for each tribe selected the team membership from a broad range of program interests. Team building approaches varied: 1) Co-team leaders, instead of a single leader, were named for one tribe and 2) For one tribe, the team membership evolved to include an oversight committee of the Tribal Council, instead of no or a single Tribal Council representative.</p>
Preliminary Highway Safety Assessment (9)	<p>Two types of preliminary safety assessments were performed: 1) The teams brainstormed highway safety issues, and 2) The research team, using crash data, conducted a preliminary crash assessment for each tribe. Insufficient available resources, including tribal staff trained in crash assessments, made it infeasible for tribal staff to conduct the assessments. The BIA and the IHS, as potential data sources, were not available to conduct the analyses for the tribes.</p> <p>Each of the teams focused on a single traffic safety project priority, rather than a broader THSIP. The teams rationalized that success with a single project would build support for a broader highway safety improvement program. Each tribe retained their team structures to address additional traffic safety issues. One tribe created a traffic safety position, using a funding source identified during and in conjunction with the project priority setting process.</p>
Council Briefings on Highway Safety Programs (11)	<p>Tribal Council briefings primarily focused on the priority project instead of a broader THSIP. Assessment reports were prepared in MS PowerPoint®.</p>
	<p>Recommendations</p> <p>Identify the tribal leader as the decision maker for appointing a lead staff or team leader.</p> <p>Identify the team leader as the decision maker for selecting the team members.</p> <p>Change “team” to coalition or committee.</p> <p>Revise the activity title and the process chart.</p> <p>Include a section on methods and resources to highlight the importance of traffic safety.</p> <p>Delete the reference to the BIAHOS Traffic Records Assessment.</p> <p>Include law enforcement in the list of potential data providers.</p> <p>Include a section to recommend initiating the THSIP process with a single safety project.</p> <p>No changes recommended.</p>

MODEL PROCESS TASK 1: Determine whether a tribe has a highway safety problem (continued)

Table 14 continued		
Analysis and Recommendations		
Activity & Page	Analysis	Recommendations
Council Decision on Investigating Highway Safety Programs (11)	The Tribal Councils approved the priority projects recommended by each team.	Transfer Tribal Council decisions from Task 1 to Task 2.

MODEL PROCESS TASK 2: Select funding sources that a tribe may pursue to address the highway safety problem

Table 14 continued		
Analysis and Recommendations		
Activity & Page	Analysis	Recommendations
Identify Potential THSIP Benefits and Costs for the Tribe (12)	<p>The three teams approached the exploration of potential funding sources differently. One team considered and selected several funding sources for its occupant protection project and found a program whose requirements were consistent with the tribe's objectives and had appropriate funding levels.</p> <p>A second team decided to explore additional sources after the tribal expenditures were approved for the data project.</p> <p>The intersection improvement project selected by the third team was complex and will require multiple funding sources. Sources have been identified for the low cost initial phases of the project. Other sources will be explored after a full project scoping process has been completed. Scoping is a process used to fully identify the construction project improvements to be made.</p>	<p>Replace HES with HSIP in this task and throughout the document, where appropriate, to acknowledge the program change from HES to HSIP resulting from the enactment of SAFETEA-LU.</p> <p>Replace BIA Regional Roads with BIA Regional DOT.</p>

MODEL PROCESS TASK 2: Select funding sources that a tribe may pursue to address the highway safety problem (continued)

Table 14 continued		
Analysis and Recommendations	Recommendations	
Activity & Page	Analysis	
<p>Identify Tribal Actions Necessary to Effectively Compete for Funds (13)</p>	<p>The two teams seeking external funding identified actions necessary to effectively compete for funding. For one tribe this involved preparing and submitting a grant application. For the remaining team, member agencies were also key funding partners. Team meetings provided a mechanism for identifying tribal actions necessary to compete for funding, including the necessary actions to secure MPO funding.</p>	<p>Delete #6 (repeats)</p>
<p>Identify Funding for Developing THSIP or Safety Project Plans (14)</p>	<p>Each of the three teams identified funding sources to plan their individual projects. One team developed a detailed plan, using in-kind services and assistance from the research team, for implementing its occupant protection project. The data project planning by the second team also involved in-kind services. Planning for the intersection improvement project was conducted using a phased approach and several funding sources, including in-kind and project funding from the partnering agencies.</p>	<p>Include a section on planning resources available from partnering agencies to complete complex projects. Add a section on staged planning, involving multiple funding sources, to complete complex projects or THSIPs.</p>
<p>Preliminary Selection of Funding Sources to Pursue (14)</p>	<p>The team, implementing the occupant protection project, selected several sources of funding. The team working on the data project opted to utilize tribal funds, which was subject to Tribal Council approval. The team, choosing the intersection improvement project, selected financial assistance from the partnering agencies and MPO for low cost improvements and early project planning and scoping. A decision on design and construction funding will be made upon completion of the project scoping.</p>	<p>Emphasize that funding decisions, whether for a THSIP or a safety project, can be scheduled during the planning or implementation phases and not necessarily at one time.</p>

MODEL PROCESS TASK 3: Plan for a THSIP or safety project

Table 14 continued Analysis and Recommendations		Recommendations
Activity & Page	Analysis	
Prepare Scope of Work for Planning a THSIP or Highway Safety Project Plan (15)	<p>In one activity, the team selecting the occupant protection project developed a detailed scope and work plan for the project.</p> <p>The team choosing the data project conducted its project scoping and planning at a broad level, because the selected data system had application for tribal emergency response.</p>	<p>Emphasize that scoping can be carried out in phases and at various levels of detail depending on the nature and complexity of the project.</p>
Prepare Scope of Work for Planning a THSIP or Highway Safety Project Plan continued (15)	<p>The team opting for the intersection improvement project developed a scope of work for the overall project planning, based on the results of a RSA. The RSA emphasized that low-cost intersection improvements will be conducted by the partnering agencies without a formal scoping document. A consultant will prepare a detailed project-scoping document for a major reconstruction project.</p>	<p>Emphasize that not all projects providing traffic safety benefits will necessarily be carried out in the name of traffic safety, if broader benefits result.</p>
Secure Funding for Development of THSIP or Highway Safety Project (17)	<p>All three of the teams utilized in-kind resources for performing their project planning.</p> <p>Additionally, the team, selecting the intersection improvement project, secured project-scoping funds from a MPO. Funding sources for project development will be identified after scoping. The timing for the availability of project development funding could become an issue.</p>	<p>Emphasize that funding may be more readily available for low cost roadway improvements than high cost improvements.</p>

MODEL PROCESS TASK 3: Plan for a THSIP or safety project (continued)

Table 14 continued Analysis and Recommendations		
Activity & Page	Analysis	Recommendations
Develop Plan for THSIP or Highway Safety Project (18)	<p>Management responsibilities for the development of the safety project plans varied among the three teams. The team leader developed the occupant protection plan. A second team leader recruited planning assistance for the data project from the MIS Director. The third team requested ADOT and the BIA, as the road owning agencies, to retain the management for the intersection improvement plan. A consultant will scope the project.</p> <p>The planning oversight was retained by two planning teams and one implementation team.</p> <p>The Tribal Council and funding agencies were the final decision makers for implementing two of the projects. The Tribal Council, owning agencies, and funding agencies will share the implementation decisions for the intersection improvement project.</p>	<p>Revise BIA Branch of Roads to BIA Regional DOT.</p> <p>Revise heading to delete "Highway".</p> <p>Add a section that agencies outside the tribe and BIA could be involved in making THSIP or highway safety projects plans and implementation decisions.</p>

MODEL PROCESS TASK 4: Implement the tribal HES project based on the plan (continued)

Table 14 continued		Recommendations
Analysis and Recommendations		
Activity & Page	Analysis	
Establish HES Project Implementation Team and Coordinator (19)	<p>None of the projects selected by the three teams were HES (HSIP) funded. Nevertheless, the implementation activities under Task 4 were applicable.</p> <p>Each team implemented the project differently. For the occupant protection project, the team leader proceeded from planning to manage the traffic safety officer who implemented the activities. The data project did not advance from planning to the implementation phase. However, the team anticipated the future data project would involve a separate project coordinator. The co-team leaders concurred with the tribal chairwoman to establish a multi-agency Implementation team to oversee the intersection improvement project activities</p>	<p>Change HES references to HSIP, including in the funding section before the policy components.</p>
Secure Funding and Technical Support for HES Project Implementation (20)	<p>Full funding was secured for the occupant protection project, and partial funding was secured for the intersection improvement project. Multiple sources, including tribal funds, were secured in both cases. Initial technical support for each project implementation was identified. However, technical support requirements will evolve over time.</p>	<p>No changes recommended.</p>
Implement HES Project in Accordance with Plan (20)	<p>According to the plan and directed by the team leader, the implementation of the occupant protection project will be executed by the traffic safety officer. The BIA and ADOT, in accordance with the RSA, will implement the low-cost elements of the intersection improvement project. Implementation strategies will need to be developed as the plans for the high-cost project elements are defined.</p>	<p>Insert a section to recognize that project implementation can be done in stages.</p>
Evaluate HES Project (20)	<p>The plan for the occupant protection project contained a strong evaluation component for both the project process and the project results to increase restraint usage. Evaluation plans were not developed for the intersection improvement and data projects.</p>	<p>Modify Tasks 3 and 4 to emphasize the need to develop a plan to evaluate both the project process and project results.</p>

POLICY GUIDANCE: Intergovernmental Issues

Table 15 Analysis and Recommendations		Recommendations
Activity & Page	Analysis	
<p>Complying with Requirements for Programs Administered or Funded by States or Their Subdivisions (23)</p>	<p>The team, working on occupant protection, utilized crash, roadway, traffic, citation, and DUI conviction data to justify their traffic safety officer project to the BIAHSA for a NHTSA State and Community Highway Safety Grant. Crash and citation data also validated the use of tribal, IHS, and ADHS funds for the occupant protection activities.</p> <p>Crash and EMS data helped the second team to document for the Tribal Council the need to appropriate Tribal funds to acquire safety data software.</p> <p>Crash, road and traffic data were used by another team to request technical and financial assistance from ADOT, BIA and a MPO to address an unsafe intersection.</p> <p>A RSA of the intersection was conducted, resulting in several recommendations to improve vehicle, pedestrian and bicycle safety, and animal protection. The tribe, ADOT, and BIA have been following established environmental, ROW, funding, and program development procedures, as they move toward implementing the recommendations.</p> <p>Traffic and roadway data have been available in the IRR Inventory and state-managed inventories, including the Highway Performance Management System. Traffic records have been available from a number of sources, including MVC reports and EMS, hospital discharge, and state health department files.</p> <p>The issue is the extent to which the tribes will be willing to share these data in support of a funding application. The participating tribes have given no indication of being unwilling to share data, as long as it will be used solely for project justification and will not include personal information.</p>	<p>No changes recommended.</p>

POLICY GUIDANCE: Intergovernmental Issues (continued)

Table 15 continued Analysis and Recommendations		Recommendations
Activity & Page	Analysis	
Tribal Capacity for Developing and Implementing HES (HSIP) Projects (25)	<p>The team, selecting the occupant protection project, built its capacity to administer and implement the project by receiving funding for and hiring a traffic safety officer.</p> <p>The team, deciding to pursue the data project, has the capacity to administer and implement the project through its MIS Department. Currently, the team, selecting the intersection improvement project, does not have the capacity to administer the implementation of the project or to internally perform the project development work. Consequently, it will rely heavily on ADOT and BIA to provide the capacity.</p>	<p>Change BIA Regional Roads Department to BIA Regional DOT.</p> <p>Expand guidance to address situations where a tribe has no or limited capacity to administer or implement any significant part of a HSIP project.</p> <p>Address tribal capacity for non-HES projects in a future update.</p>

POLICY GUIDANCE: Structure for Tribal Highway Safety Improvement Program

Table 15 continued Analysis and Recommendations		Recommendations
Activity & Page	Analysis	
Program Governance (26)	<p>Overall program governance resided with the three Tribal Councils. Once the three tribal leaders assigned each team leader, the leaders recruited team members from a variety of tribal departments in advance of the initial project meeting. Membership for two teams included external agencies. A Council transportation oversight committee monitored the intersection improvement project. The team guided the project selection process. Two of the teams were retained during early stages of the implementation for the occupant protection and data projects. A single department took the leadership role in managing the project process for each of the tribes. HES (HSIP) expertise was not present in any of the three participating tribes.</p>	<p>Include a tribal consideration to have at least one staff person attend HSIP training in advance of implementing a HSIP project.</p>
Interaction and Coordination w/Other Tribal Programs (27)	<p>Interaction among the tribal programs was a key component of all three projects. The occupant protection project involved tribal police, health, EMS, and transportation.</p>	<p>No changes recommended.</p>

POLICY GUIDANCE: Structure for Tribal Highway Safety Improvement Program (continued)

Table 15 continued Model Guidelines Analysis and Recommendations		
Activity & Page	Analysis	Recommendations
Interaction and Coordination with Other Tribal Programs continued (27)	<p>The data project involved tribal transportation, police, environmental health, EMS, fire, OSHA, and MIS departments.</p> <p>The intersection improvement project involved the Tribal Council transportation oversight committee, an affected tribal district, and tribal planning, police, and attorney general departments, and a utility authority.</p> <p>Outside agency involvement was also important for the data and intersection improvement projects.</p>	
Roles and Responsibilities for THSIP Process Elements (27)	<p>The team leaders and a project coordinator assured the roles and responsibilities were defined for all three teams. One team leader developed a detailed work plan identifying the roles, responsibilities, and timelines for the THSIP process elements. The other two teams assigned ongoing roles and responsibilities as the project discovery process was carried out. External agencies were assigned roles and responsibilities for two of the projects.</p>	<p>Clarify that assignments of roles and responsibilities may be phased in, as the project discovery evolves.</p>
Integration of Data, Equipment and Software (28)	<p>All of the projects involved assembling data from multiple sources. The data project was intended to integrate data currently being maintained by various departments into a centralized data management system and to provide multiple tribal departments access to this data.</p> <p>The occupant protection and intersection improvement projects entailed compiling data from multiple sources for project use. It was difficult for the two teams to justify a decision to build an integrated data system based on a single safety project.</p>	<p>Stress the importance of conducting a benefit cost analysis to determine if a data integration system is warranted.</p>

POLICY GUIDANCE: Education and Training Requirements

Table 15 continued Model Guidelines Analysis and Recommendations		
Activity & Page	Analysis	Recommendations
Decision Making (29)	<p>Although each of the three teams had some experience in elements of traffic safety, none of the teams had significant experience making safety project decisions based on data analysis and program availability. Consequently, the research team spent considerable time working with each team to determine priorities, strategies, and funding sources using these parameters. The SPR 592 project has demonstrated that training on traffic safety decision-making is a major component in establishing a THSIP or a traffic safety project.</p>	<p>No changes recommended.</p>
Data Collection, Storage, Maintenance, and Integration (30)	<p>The three teams received substantial education and training on the importance of accurate, timely, and accessible data and data management systems. Traffic safety data assessments were utilized to identify, prioritize, justify, and scope the projects. Potential improvements in MVC data collection and management were discussed with the teams. Each team made effective use of the training in its traffic safety project decisions.</p>	<p>Add GOHS and ADOT to crash training sources. Add state health department to EMS training sources.</p>
Equipment and Software (30)	<p>No equipment and software training was conducted with the teams during this project. However, the use of the ADOT ALISS for MVC data was discussed with all three teams.</p>	<p>No changes recommended.</p>
Hazardous Location Identification and Prioritization (30)	<p>Traffic safety issue identification and prioritization training was provided to each of the teams through issue brainstorming and traffic safety assessments. These tools were effective in assisting the teams to make traffic safety project decisions.</p>	<p>Reference IRR final rules instead of negotiated rulemaking. Revise BIA Regional Roads Program to BIA Regional DOT.</p>
Project Development, Implementation, and Evaluation (31)	<p>Training on project development and implementation was provided to the team leader for the occupant restraint project. Team training for the data project will be provided when the software is acquired. Tribal training needs have not been defined for the intersection improvement project. However, training on the ADOT project development process could be beneficial for the team. A one-day training course on the RSA process was conducted for the implementation team.</p>	<p>Add a paragraph on RSA training explaining the program, its applicability, and its availability. Revise BIA Regional Roads Program to BIA Regional DOT.</p>

TECHNICAL GUIDANCE: Data Requirements, Collection, Storage, and Maintenance

Table 15 continued Analysis and Recommendations		
Activity & Page	Analysis	Recommendations
Basic Tribal Requirements (32)	<p>All three tribal PDs collect crash data, using the ATAR form. At least one of the tribes uses a police incident report form to record minor MVCs or those for which very little information is available.</p> <p>The tribal transportation, planning or public works staff, consultants, or BIA compile roadway and traffic data on the IRR Inventory 5704 Form for inclusion into the national RIFDS.</p> <p>Two tribal and one IHS EMS collect emergency response data with differing levels of detail.</p>	<p>Reference roadway, traffic and EMS data in addition to crash data.</p> <p>Change all HES references to HSIP.</p>
Federal Requirements (32)	<p>The tribal transportation staff or consultants, and BIA agency staff adhere to the federal IRR standards to collect roadway and traffic data. In addition, the tribal police follow the state definitions and standards to document MVCs. However, the crash data are in manual systems and the tribes lack the capacity to analyze the data.</p> <p>The research team discussed automating crash data and potential linking it with either EMS or citation files with one of the team leaders. The leader planned to modify the crash module within the law enforcement computer system to capture additional fields from the ATAR.</p> <p>Only one of the teams pursued a roadway (HSIP) type project. Engineering studies for the project are nearing the starting point. Prioritization of recommended project improvements has started, based on cost and resource availability.</p>	<p>No changes recommended.</p>
State and Local Requirements (33)	<p>The state of Arizona is responding to federal requirements to develop a SHSP and a HSIP plan. The plans will include highway safety objectives and strategies to meet the objectives.</p>	<p>Include SAFETEA-LU updates in this section.</p> <p>Include a section on how to acquire training on the safety plans.</p>

TECHNICAL GUIDANCE: Data Requirements, Collection, Storage, and Maintenance (continued)

Table 15 continued		
Analysis and Recommendations		
Activity & Page	Analysis	Recommendations
<p>Discussion of Application of Federal and State Requirements (33)</p>	<p>The three tribes have generally complied with federal and state data collection requirements, since all collect crash data using the ATAR and record roadway and traffic data on the IRR Inventory 5704 Form for inclusion into the RIFDS.</p> <p>The research team found differences in the tribes' management of data. Each tribe has been using a different storage system for crash data. The responsibility for crash data has been residing with each tribal PD. The three PDs have been entering limited ATAR data elements into an automated system and filed the paper copies in manual files. None of the PDs have had the capability for field entry of crash data into its computer-based storage system or to integrate data from multiple sources. One tribe has selected a data project that will eventually provide that capability.</p> <p>All three tribes have been submitting roadway and traffic data to BIADOT for integration into the RIFDS. Responsibility for roadway and traffic data has been residing in different departments for the three tribes. Due to scarce resources and limited record clerk positions, there is a lag between the time the crash reports are generated in the field and the time the data are entered into the automated system. Entry of data into ALISS is a privacy protection issue for one of three tribes.</p> <p>Some automated traffic and roadway data management reports are available through RIFDS. BIA currently controls data entry, but recently, online "read only" services for tribes have become available from the BIA, allowing tribes access to the stored data.</p>	<p>Reference SAFETEA-LU</p> <p>Under data requirements, limit the crash data collectors to only law enforcement.</p>
<p>Data Management for Integration, Storage and Maintenance (35)</p>		<p>No changes recommended.</p> <p>Tribes could consider entering into crash data sharing agreements with ADOT. This would assure data is readily available to address needed improvements for all jurisdictions roads that serve tribal communities. It would provide a clearer picture of traffic safety trends and issues and support the use of safety funding on tribal roads.</p>

TECHNICAL GUIDANCE: Equipment and Software Requirements

Table 15 continued		
Analysis and Recommendations		
Activity & Page	Analysis	Recommendations
Manual SMS (36)	<p>Crash data maintenance for all three tribes is basically manual systems. The original ATARs are filed and only portions of the ATAR fields are input into the automated systems. One tribe is utilizing a separate MS Access® database, established by the IHS, to capture injury surveillance categories, such as date, location, seatbelt usage, impaired driving, and animal involvement. Due to scarce resources and limited record clerk positions, there is a lag between the time the crash reports are generated in the field and when the data are entered into the automated system. Entry of data into ALISS is a privacy protection issue for one of the three tribes.</p> <p>Some automated traffic and roadway data management reports are available through RIFDS. BIA currently controls data entry, but recently, online “read only” services for Tribes have become available from BIA, allowing tribes access to the stored data.</p>	<p>No changes recommended.</p>
Automated SMS (36)	<p>None of the tribes have an automated SMS.</p>	<p>No changes recommended.</p>

TECHNICAL GUIDANCE: Hazardous Roadway Locations Identification

Table 15 continued Analysis and Recommendations		
Activity & Page	Analysis	Recommendations
Identification of Hazardous Roadways Locations with Crash Experience (37)	<p>The research team developed three preliminary MVC analyses, using data from ALISS and in one case, manual review of ATARs and incident reports. The crash reports identified the locations of MVCs and included the number of crashes, fatalities, and injuries, together with several summaries of crash characteristics.</p> <p>For the team, working on the intersection improvement project, ADOT and BIA provided the traffic and roadway data, roadway plans, and aerial photography. Site visits were conducted and community knowledge of the safety issues was solicited.</p>	<p>Include a section on the RSA and local knowledge interviews for identifying hazardous roadway safety issues.</p> <p>Add to information, roadway plans, aerial photography, site visits, and community knowledge.</p>
Identification of Hazardous Roadways Locations Based on Potential for Crashes (39)	<p>The team, addressing the intersection improvement project, identified the high crash location through the preliminary crash analysis. Upon a detailed analysis of the location coding, the number of crashes occurring within 20 feet of the intersection diminished. Although, it was not intentional to base the identification of the intersection on crash potentiality, the RSA documented sight distance issues and the great potential for high speed intersection crashes.</p>	<p>Include RSA methodology and community knowledge for identifying potential crash locations.</p>
Hazardous Roadway Locations Prioritization (40)	<p>The team that worked on the intersection improvement project reviewed the various high crash locations contained in the preliminary MVC analysis. The tribe has several land bases, but for the main and largest land base, the intersection location had the highest number of crashes. The team made its selection based on this information. As mentioned in the previous section, upon further analysis, it was discovered that the majority of crashes were nearby, but not within 20 feet of the intersection. However, the potential for crashes was significant.</p>	<p>No changes recommended.</p>

TECHNICAL GUIDANCE: Scoping, Prioritization, and Funding Application

Table 15 continued Analysis and Recommendations		
Activity & Page	Analysis	Recommendations
Project Scoping (41)	<p>Project scoping was used by all three tribes, although the level of detail varied. The team, implementing an occupant protection project, developed a detailed work program that constituted a project scope and identified all of the major components of the project. However, the individual components were not scoped.</p> <p>The team, selecting the data project, developed the project scope in the form of an RFP.</p>	No changes recommended.
Project Scoping continued (41)	<p>Several levels of project scoping have or are being developed for the team addressing the intersection improvement project. The RSA team developed a project scope in terms of recommending a series of specific improvements. ADOT and BIA further defined the scopes for the low-cost improvements by identifying actions required for implementation or incorporating the improvements into project plans and specifications. The high-cost intersection project will be scoped through a formal consultant-developed scoping study.</p>	
Project Prioritization (42)	<p>None of the teams have sought HSIP funding. The team that selected the intersection improvement project might request an additional RSA be performed at another high crash location. Should this occur, the tribal planning department would need to prioritize the two projects, if it seeks HSIP funding for both.</p>	No changes recommended.
Project Funding (42)	<p>None of the teams sought HSIP funding at this time, but two of the teams could assist their tribe to apply in the future.</p>	No changes recommended.

TECHNICAL GUIDANCE: Safety Project Implementation and Evaluation

Table 15 continued Analysis and Recommendations		
Activity & Page	Analysis	Recommendations
Project Design and ROW (43)	The scoping study and any follow-up design for the major intersection improvement project will follow the ADOT process since the project is on a SR.	Revise BIA Branch of Roads to BIA Regional DOT
Project Construction (44)	Construction for the intersection improvement project will follow the ADOT process, since the project is on a SR.	No changes recommended.
Project Evaluation (44)	The occupant protection project has an evaluation process built into the scope of work. The other projects have not reached a stage where project evaluation has been a consideration.	No changes recommended.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSIONS

- The tribal teams recognized the importance of traffic safety for the well-being of their citizens and enthusiastically participated in the research project.
- The teams had certain prior experience with traffic safety programs, mostly seatbelt programs, with emphasis on CPS, and enforcement of traffic laws.
- The teams utilized the technical assistance provided by the research team to build internal capacity during the early stages of the research.
- The teams recognized the importance of data in determining the traffic safety needs and priorities.
- Each team developed a single priority project rather than a comprehensive traffic safety program. This decision proved to be the correct course of action in view of the significant resources that were required to identify, plan, fund and implement even a single project.
- Tribal traffic safety capacity building progressed during the project. The Hualapai Tribe was granted funds and hired a full-time traffic safety officer. The Gila River Indian Community has readdressed a GIS/CAD system that will provide the foundation for managing and distributing the tribe's traffic safety data. The Tohono O'odham Nation strengthened its capacity by utilizing the RSA methodology to start improvements at a hazardous intersection.
- None of the tribes can be considered to have reached a capacity level sufficient to conduct a comprehensive traffic safety program without external assistance. This was due in large part to each tribe being challenged with limited resources that impacted its ability to build traffic safety capacity.
- Tribal disadvantages were identified within each of the five traffic safety capacity areas: decision-making; data collection and storage; equipment and software; project prioritization; and project development, implementation, and evaluation.
- The field experience permitted the research team to augment a tribal guide that identifies methods and potential resources for traffic safety capacity building in the five traffic safety capacity areas.
- The *Tribal Traffic Safety Model and Guidelines*^[21] proved useful for assisting the teams throughout the development of each traffic safety project. The research results revealed the need to revise the model and guide to make it more effective.

6.2 RECOMMENDATIONS

- ADOT should consider making a concerted effort to reach agreement with every tribe in AZ for sharing MVC data.
- ADOT, BIADOT and tribal PDs should consider how to reconcile the field size or space dedicated to recording the crash locations in the various systems - the BIA RIFDS, the Tribal police systems, and the ALISS database.
- ADOT, BIADOT and tribal PDs should consider how to reconcile the standardization of the crash location names or the creation of look-up tables for multiple names of the same facilities in the various systems (RIFDS, the tribal police systems, and the ALISS).
- ADOT should consider a project to broaden the *Tribal Traffic Safety Model and Guidelines*^[20] for application beyond HES eligible construction projects to a full range of traffic safety improvement projects eligible for funding under HSIP and other highway safety programs.
- ADOT should consider a demonstration project for providing training and resources to at least one tribe to fully build its traffic safety capacity using the capacity-building guidance provided from this research. The results of the demonstration project could be used as a traffic safety capacity-building model for other tribes and local governments.
- The state of AZ should consider developing a program to assist all tribes in the state to build their capacity for developing and implementing a traffic safety program. This recommendation is made in consideration of the statewide traffic safety goal of zero MVC fatalities and the fact that the American Indian population has a MVC fatality rate more than three times the state average.

APPENDICES

Appendix 1 – SPR 592 Building Tribal Traffic Safety Capacity Work Plan				
Task & Activity Number	Task and Activity	Products	Time Table	Responsible Party
TASK 1	Identify key elements.		3 months After Work Plan approval	ITCA
Subtask 1.1	Document project purpose, background, and tribal benefits, tasks, timelines, and responsibilities.	Paper Develop an overview using products from 1.1.1 and 1.1.2.	1 month After Work Plan approval	ITCA
Activity 1.1.1	Research published state and national fatality rates for American Indians related to motor vehicle crashes; and identify ITCA highway safety initiatives.	Summary Summarize the statistics and the ITCA highway safety activities.		ITCA
Activity 1.1.2	Outline governmental benefits, tasks, timelines and responsibilities.	Summary Summarize the tribal benefits, responsibilities and timelines.		ITCA
Subtask 1.2	Select tribal governments to participate in demonstration project.	Paper Document selection process used in 1.2.1 through 1.2.6.	3 months After Work Plan approval	ITCA
Activity 1.2.1	Develop criteria for selecting tribal governments to participate in the project.	List List selection criteria.		ITCA
Activity 1.2.2	Identify potential tribal governments to participate in project.	List List tribal governments considered for participation.		ITCA
Activity 1.2.4	Prepare participation proposal and presentation.	PowerPoint Activity Checklist Develop model agreements/presentations.		ITCA

Appendix 1 continued				
Task & Activity Number	Task and Activity	Products	Time Table	Responsible Party
Activity 1.2.5	Present participation proposal to tribal governments.			Lead Persons from each tribal government (ITCA)
Activity 1.2.6	Finalize letters of agreement with participating tribal governments.	Letters of Agreement		Tribal Leaders ITCA
Subtask 1.3	Develop Tribal Highway Safety Funding Guide	Paper Create guide from products 1.3.1 and 1.3.2.	3 months After Work Plan approval.	ITCA
Activity 1.3.1	Identify potential federal funding sources.	List List potential program funding sources by federal departments and offices.		ITCA
Activity 1.3.2	Research program features of each federal funding source.	Summary Summarize program requirements, application processes and cycles, and points of contact for each potential funding source.		ITCA
TASK 2	Implement the model process for a Tribal Highway Safety Improvement Program (THSIP).		9 months After Task 1	Tribal Administrations ITCA
Subtask 2.1	Determine whether a tribal government has a highway safety problem.	Paper	3 months	Tribal Administrations ITCA
Activity 2.1.1	Establish a coordinating team with broad-based representation to plan the THSIP program.	List List potential internal and external partners for the lead persons.		Lead persons from each tribal government
Subtask 2.1	Determine whether a tribal government has a highway safety problem.	Paper	3 months	Tribal Administrations ITCA

Appendix 1 continued				
Task & Activity Number	Task and Activity	Products	Time Table	Responsible Party
Activity 2.1.1	Establish a coordinating team with broad-based representation to plan the THSIP program.	List List potential internal and external partners for the lead persons.		Lead persons from each tribal government
Activity 2.1.2	Select a team leader for the Coordinating Team.			Tribal coordinating teams
Activity 2.1.3	Define coordinating team responsibilities.	Work plan Meeting agendas Outline project schedule and planning activities.		Tribal coordinating teams (ITCA)
Activity 2.1.4	Brainstorm tribal highway safety issues.	Matrix Categorize tribal highway safety issues.		Tribal coordinating teams (ITCA)
Activity 2.1.5	Determine available data needed to assess the magnitude of the safety problems associated with the tribal highway safety issues.	Data survey Compile what data is collected, who collects data, where data is stored, and if the data is available for issues that surfaced in 2.1.4.		Tribal coordinating teams (ITCA)
Activity 2.1.6	Gather and analyze available data to determine the location of motor vehicle crashes (MVC).	Pin Maps Plot the MVC locations, using data identified in 2.1.5.		Tribal coordinating teams (ITCA)
Activity 2.1.7	Assess the magnitude of the problem associated with each tribal highway safety issue using data.	Matrix Prioritize highway safety issues identified in 2.1.4.		Tribal coordinating teams (ITCA)
Activity 2.1.8	Identify potential safety funding sources to eliminate, reduce, or mitigate the problems associated with each tribal highway safety issue.	Matrix Match highway safety issues detected in 2.1.4 with potential highway safety funding sources developed in 1.3.		Tribal coordinating teams (ITCA)

Appendix 1 continued				
Task & Activity Number	Task and Activity	Products	Time Table	Responsible Party
Activity 2.1.9	Prepare team report.	Matrix Summarize team activities regarding safety issues, safety infrastructure and safety funding.		Tribal coordinating teams
Activity 2.1.10	Submit report to Tribal administration for review and comment.	Direction on proceeding with next process step.		Tribal coordinating teams Tribal administrations
Subtask 2.2	Select funding sources to address highway safety issues.	List List selected funding programs and tribal infrastructure actions.	2 months	Tribal administrations ITCA
Activity 2.2.1	Investigate selected funding sources for application to tribal highway safety needs.	Work plan Documented information on funding source uses and requirements.		Tribal coordinating teams (ITCA)
Activity 2.2.2	Determine necessary tribal actions, including tribal infrastructure capacity, to obtain safety funds.	Documented tribal actions necessary to effectively compete for specific program funds.		Tribal coordinating teams (ITCA)
Activity 2.2.3	Prepare highway safety funding recommendations for tribal administration/Council.	Paper Report recommending funding programs and infrastructure actions.		Tribal coordinating teams
Activity 2.2.4	Decisions on tribal coordinating team recommendations.	Direction on proceeding with next process step.		Tribal administrations
Subtask 2.3	Plan for a THSIP or safety project.	Scope of work Action plan for implementing a THSIP or safety project, including tribal infrastructure capacity actions.	3 months	Tribal administrations ITCA
Activity 2.3.1	Prepare scope of work for development of THSIP or safety project.			Tribal coordination teams (ITCA)

Appendix 1 continued				
Task & Activity Number	Task and Activity	Products	Time Table	Responsible Party
Activity 2.3.2	Identify capacity issues associated with decision-making; data collection and storage; equipment and software for data management; project prioritization; and project development, implementation, and evaluation.	Matrix List the capacity issues associated with 2.1.4.		Tribal coordinating teams (ITCA)
Activity 2.3.3	Identify methods to assist the tribal governments to build the capacity to address highway safety issues.	Matrix List and describe alternative methods for capacity issues depicted in 2.3.2.		Tribal coordinating teams (ITCA)
Activity 2.3.4	Develop plan for tribal infrastructure capacity to support the THSIP or safety project.	Paper Detailed actions costs and funding sources for developing infrastructure capacity.		Tribal coordinating teams (ITCA)
Activity 2.3.5	Submit to tribal administration for review and comment.	Tribal direction on proceeding with next steps.		Tribal coordinating teams Tribal administrations
Activity 2.3.6	Solicit funding for developing THSIP plan and implementing infrastructure capacity plan.	Funding for THSIP plan development and infrastructure capacity implementation.		Tribal administrations (ITCA)
Activity 2.3.7	Develop plan for the THSIP or safety project	Written plan		Tribal coordinating teams (ITCA)
Activity 2.3.8	Obtain tribal administration approval for implementing THSIP or safety project, and infrastructure capacity plan, and forming an implementation team.	Tribal direction on proceeding with next steps.		Tribal coordinating teams Tribal administrations

Appendix 1 continued				
Task & Activity Number	Task and Activity	Products	Time Table	Responsible Party
Activity 2.3.9	Establish an implementation team	Implementation team		Tribal coordinating teams
Activity 2.4.1	Develop infrastructure capacity and secure funding to implement a Tribal Highway Safety Improvement Program or safety project.	Tribal highway safety improvement program or project and infrastructure capacity to implement program.		Tribal implementation teams (ITCA)
Activity 2.4.2	Implement the THSIP or safety project according to the plan.	Safety project(s).		Tribal implementation teams (ITCA)
TASK 3	Develop method recommendations for infrastructure capacity to be considered during THSIP Implementation.	Guide Guide for Tribes on Methods to Develop Infrastructure Capacity for Implementing Tribal Highway Safety Improvement Programs.	12 months After Work Plan approval	ITCA
Subtask 3.1	Develop preliminary list of infrastructure capacity development methods for program decision-making; data collection and storage; equipment and software for data management; and evaluation, project prioritization, and project development and implementation.	List List and description of methods.		ITCA
Subtask 3.2	Use developed list in working with demonstration tribes to assist them in identifying infrastructure capacity building needs.	Modified list and description of methods.		Tribal coordinating teams (ITCA)
Subtask 3.3	Prepare final list of infrastructure capacity building methods.	List		ITCA

Appendix 1 continued				
Task & Activity Number	Task and Activity	Products	Time Table	Responsible Party
TASK 4	Finalize report and research notes.	Modified Model Process and Guidelines Report Research Notes	15 months After Work Plan approval	ITCA
Subtask 4.1	Modify "Tribal Traffic Safety Model and Guidelines" document.	Modified Model Process and Guidelines.		ITCA
Activity 4.1.1	Identify and justify proposed modifications to the model process and guidelines based on field experience.	Paper		ITCA
Activity 4.1.2	Review "Tribal Traffic Safety Model and Guidelines" document and Building Tribal Traffic Safety Capacity project process.	Modified THSIP document.		ITCA Tribal implementation teams SPR 592 TAC FHWA
Activity 4.1.3	Finalize "Tribal Traffic Safety Model and Guidelines" document.	Modified document.		ITCA
Subtask 4.2	Prepare SPR 592 final report.	Report research notes		ITCA
Activity 4.2.1	Prepare draft final report and research notes.	Draft report research notes		ITCA
Activity 4.2.2	Provide draft report and research notes to SPR 592 TAC, ATRC, FHWA, and participating tribal governments for review.	TAC, ATRC, FHWA and tribal comments.		Tribal implementation teams SPR 592 TAC ATRC FHWA
Activity 4.2.3	Finalize and submit report and research notes.	Final report research notes		ITCA
TASK 5	Present research results.		17 months After Work Plan approval	ITCA
Subtask 5.1	Prepare presentation.	PowerPoint summary Organize presentation materials.		ITCA

Appendix 1 continued				
Task & Activity Number	Task and Activity	Products	Time Table	Responsible Party
Subtask 5.2	Present study results to audience identified by SPR 592 TAC.	Conduct presentations.		ITCA

Appendix 2 – Matrix of Program Uses and Application Deadlines

Program	Program Uses													Typical Application Deadline		
	Roadway Improvements	Multiple Uses* Transportation	Data, Planning & Studies	Alcohol & Drugs	Occupant Protection	Child Passenger Safety	Community & School Safety	Behavioral Safety	Courts	Law & Enforcement	Emergency Response	Prevention & Treatment	Education & Training		Community Dev & Infrastructure	Equipment
Community Facilities Grant	X													X		Anytime
Rural Community Development													X	X	X	January annually
Alcohol Abuse Reduction				X									X			March annually
Safe Schools/Healthy Students				X					X				X			April annually
Social & Economic Development Strategies (SEDS)	X	X	X						X				X	X	X	April annually
Injury Prevention Program	X	X	X	X	X	X	X		X	X			X	X	X	Variable, every 3 to 5 years
Healthy Native Communities Fellowship				X	X								X			September annually
Tribal Management Grant Program			X												X	August annually
Family and Juvenile Treatment Drug Courts		X	X	X								X				April annually

Source: Tribal Traffic Safety Funding Guide^[2]

* The category, Multiple Uses Transportation, includes non-roadway improvements, such as: pedestrian, bicycle, transit facilities and services, and off-road projects including wildlife hazardous elimination and parking facilities.

Matrix of Program Uses and Application Deadlines - continued

Program	Program Uses													Typical Application Deadline		
	Roadway Improvements	Multiple Uses Transportation*	Data, Planning & Studies	Alcohol & Drugs	Occupant Protection	Child Passenger Safety	Community & School Safety	Behavioral Safety	Courts	Law & Enforcement	Emergency Response	Prevention & Treatment	Education & Training		Community Dev & Infrastructure	Equipment
Indian Reservation Roads (IRR) Formula Program	X	X	X	X	X	X	X	X	X	X			X	X	X	July annually and as needed
IRR High Priority Projects Program	X	X		X	X	X	X	X	X				X	X	X	November annually
Indian Highway Safety Program		X	X	X	X	X	X	X	X		X	X	X	X	X	April annually
Tribal Resources Grant Program									X	X			X	X	X	May annually
Tribal Courts Assistance Program									X	X			X	X	X	January annually
Indian Alcohol and Substance Abuse Program			X	X				X	X		X		X	X	X	January annually
Correctional Facilities on Tribal Lands		X	X										X		X	Dependent on funding availability
Drug Court Discretionary Grants		X	X					X					X		X	March annually

Source: Tribal Traffic Safety Funding Guide^[22]

* The category, Multiple Uses Transportation, includes non-roadway improvements, such as: pedestrian, bicycle, transit facilities and services, and off-road projects including wildlife hazardous elimination and parking facilities.

Matrix of Program Uses and Application Deadlines - continued

Program	Program Uses													Typical Application Deadline			
	Roadway Improvements	Multiple Uses Transportation*	Data, Planning & Studies	Alcohol & Drugs	Occupant Protection	Child Passenger Safety	Community & School Safety	Behavioral Safety	Courts	Law & Enforcement	Emergency Response	Prevention & Treatment	Education & Training		Community Dev & Infrastructure	Equipment and Software	Capacity Building
Edward Byrne Memorial Justice Assistance Grants			X	X				X	X				X			X	March annually Fed February annually State
National Criminal History Improvement Program			X				X	X	X				X			X	March annually
Mental Health Courts Program			X	X			X	X	X			X	X			X	Dependent on funding availability
Tribal Youth Program				X			X	X	X			X	X			X	March annually
Highway Safety Improvement Program	X	X	X		X				X	X	X			X		X	Anytime
Safe Routes to School	X	X	X					X	X								Unknown New Program
Highway-Rail Grade Crossing	X	X	X														Anytime
Surface Transportation Program	X	X	X													X	Anytime

Source: Tribal Traffic Safety Funding Guide^[2]

* The category, Multiple Uses Transportation, includes non-roadway improvements, such as: pedestrian, bicycle, transit facilities and services, and off-road projects including wildlife hazardous elimination and parking facilities.

Matrix of Program Uses and Application Deadlines - continued

Program	Program Uses													Typical Application Deadline		
	Roadway Improvements	Multiple Uses Transportation*	Data, Planning & Studies	Alcohol & Drugs	Occupant Protection	Child Passenger Safety	Community & School Safety	Behavioral Safety	Courts	Law & Enforcement	Emergency Response	Prevention & Treatment	Education & Training		Community Dev & Infrastructure	Equipment and Software
Highway Bridge Replacement & Rehabilitation	X		X													Anytime
Equity Bonus	X	X	X		X	X			X	X			X	X	X	Anytime
Transportation Enhancement	X	X	X										X			Summer annually
State & Community Highway Safety Grants		X	X	X	X	X	X	X	X	X	X	X	X	X	X	April annually
Seat Belt Use Programs			X		X	X				X			X	X	X	Unknown New Programs
Impaired Driving Grants			X	X					X	X	X	X	X	X	X	Unknown annually
State Highway Program	X	X	X										X	X	X	Anytime
AAA Foundation for Traffic Safety		X	X	X	X	X	X	X					X			Summer annually
Aerators Indian Tribes Grants				X	X	X	X	X					X		X	February annually

Source: *Tribal Traffic Safety Funding Guide*^[22]

* The category, Multiple Uses Transportation, includes non-roadway improvements, such as: pedestrian, bicycle, transit facilities and services, and off-road projects including wildlife hazardous elimination and parking facilities.

Matrix of Program Uses and Application Deadlines - continued

Program	Program Uses													Typical Application Deadline			
	Roadway Improvements	Multiple Uses Transportation*	Data, Planning & Studies	Alcohol & Drugs	Occupant Protection	Child Passenger Safety	Community & School Safety	Behavioral Safety	Courts	Law & Enforcement	Emergency Response	Prevention & Treatment	Education & Training		Community Dev & Infrastructure	Equipment and Software	Capacity Building
AT&T Education & Civic & Community Service Grants				X	X	X	X	X			X	X	X			X	Anytime
Ford Foundation Grants & Loans				X			X	X	X				X	X		X	Anytime
W. K. Kellogg Foundation Grants				X	X	X	X	X					X	X		X	Anytime
Lumina Foundation for Education Grants						X			X				X	X		X	Anytime
Robert Wood Johnson Health & Healthcare Grants				X			X				X	X				X	Anytime
IRR Flexible Financing	X	X	X	X	X	X							X		X	X	Anytime
Highway Expansion & Extension Loans	X																Quarterly

Source: Tribal Traffic Safety Funding Guide^[22]

* The category, Multiple Uses Transportation, includes non-roadway improvements, such as: pedestrian, bicycle, transit facilities and services, and off-road projects including wildlife hazardous elimination and parking facilities.

Appendix 3 - Activity Checklist

Task 1: Determine whether a tribe has a highway safety problem

- Verify that a highway safety problem exists.
- Appoint a planning team with a broad-based representation.
Include Tribal Council
Include representatives from external safety agencies
- Choose a team leader who has a long-term commitment to serving the tribe.
- Define team responsibilities.
Include assessing the magnitude of the safety problem
Include identifying highway safety funding available to the tribe
- Determine how the team will use database information to assess the magnitude of the safety problem.
- Seek assistance from external agencies to obtain and analyze highway safety data.
- Compare tribal highway safety data to state and national statistics.
- Define the relationship between the tribal traffic safety analysis and the *Safety Management System* (administered by the Bureau of Indian Affairs, Branch of Roads).
- Document preliminary assessment of the safety problem(s).
Include identifying *number* of motor vehicle crashes (MVC)
Include identifying MVC-related fatalities
Include identifying MVC-related injuries
Include identifying probable causes of MVCs
Include identifying potential strategies for eliminating MVCs
- Identify available safety funding sources to eliminate, reduce, or mitigate the safety problem.
- Obtain input from funding agencies.
Including applicability
Including eligibility
Including availability
Including requirements

Appendix 3 - Activity Checklist continued

- Prepare summary report for Tribal Council.
Include preliminary assessment of the safety problem
Include potential funding sources
- Obtain Tribal Council approval to proceed to establish a *Tribal Highway Safety Improvement Program* or to develop a safety project.
- Brief Tribal Council on available safety funding options.
- Recommend to Tribal Council which safety funding to pursue.
- Acquire Tribal Council approval.

Task 2: Select funding sources to address the safety problem.

- Contact potential funding agencies to request program overviews and presentations.
- Assess each funding source to determine whether eligible funding could address tribal safety needs.
- Determine requirements for each funding source.
 - Eligibility
 - Program
 - Application
 - Availability
 - Match
 - Restrictions
 - One-time or continuous funding
- Determine necessary tribal actions, including tribal capacity, to obtain safety funds.
- Compare estimated program benefits and costs associated with each funding source.
- Prepare summary report for Tribal Council to review funding options.
- Obtain Tribal Council approval to pursue safety funds to establish a *Tribal Highway Safety Improvement Program* or to develop a safety project.

Appendix 3 - Activity Checklist continued

- Gain Tribal Council approval to have the team develop the *Tribal Highway Safety Improvement Program* or the safety project.

Task 3: Plan for a *Tribal Highway Safety Improvement Program* or safety project.

- Review the technical and policy guidelines for application to the tribe's safety environment.
- Prepare the Scope of Work for the *Tribal Highway Safety Improvement Program* or safety project.
- Prepare estimate of cost to develop the *Tribal Highway Safety Improvement Program* or safety project.
- Identify the potential funding sources to develop the *Tribal Highway Safety Improvement Program* or safety project.
- Obtain Tribal Council approval for the Scope of Work.
- Solicit funding to develop the *Tribal Highway Safety Improvement Program* or safety project.
- Develop a plan for the *Tribal Highway Safety Improvement Program* or safety project.
- Obtain Tribal Council approval for the plan.
- Obtain Tribal Council approval to establish an implementation team.
- Establish a team.
 - Include Tribal Council
 - Include funding agency

Task 4: Implement a safety project.

- Secure technical support and funding to implement a *Tribal Highway Safety Improvement Program* or safety project.
- Implement the *Tribal Highway Safety Improvement Program* or safety project according to the plan.
- Evaluate the *Tribal Highway Safety Improvement Program* or safety project after the implementation has been completed.

Appendix 4 - Traffic Records Data Survey

The purpose of this short survey is to determine: 1) what traffic safety related data is collected, 2) who collects the data, 3) how the data is stored, and 4) can the data be shared and utilized in order to gain technical assistance and financial resources.

When responding to the questions, please check the appropriate box and write any explanations in the spaces provided.

1. Is traffic safety data systematically collected?

Accident reports	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Road inventory	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Emergency room reports	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Court citations	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Hospital discharge	<input type="checkbox"/> Yes	<input type="checkbox"/> No
EMS reports	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other:	<input type="checkbox"/> Yes	<input type="checkbox"/> No

If no, please explain the reasons.

2. How is the data stored?

Accident reports	<input type="checkbox"/> Computer	<input type="checkbox"/> Paper	<input type="checkbox"/> Both
Road inventory	<input type="checkbox"/> Computer	<input type="checkbox"/> Paper	<input type="checkbox"/> Both
Emergency room reports	<input type="checkbox"/> Computer	<input type="checkbox"/> Paper	<input type="checkbox"/> Both
Court citations	<input type="checkbox"/> Computer	<input type="checkbox"/> Paper	<input type="checkbox"/> Both
Hospital discharge	<input type="checkbox"/> Computer	<input type="checkbox"/> Paper	<input type="checkbox"/> Both
EMS reports	<input type="checkbox"/> Computer	<input type="checkbox"/> Paper	<input type="checkbox"/> Both
Other:	<input type="checkbox"/> Computer	<input type="checkbox"/> Paper	<input type="checkbox"/> Both

- Bureau of Indian Affairs (please specify type of file)

- Indian Health Services (please specify type of file)

Appendix 4 - Traffic Records Data Survey continued

3. If the data is stored on a computer, what software is being used? Please respond for each type of data collected.

Accident reports	<input type="checkbox"/> Access	<input type="checkbox"/> Excel	<input type="checkbox"/> Other: _____
Road inventory	<input type="checkbox"/> Access	<input type="checkbox"/> Excel	<input type="checkbox"/> Other: _____
Emergency room reports	<input type="checkbox"/> Access	<input type="checkbox"/> Excel	<input type="checkbox"/> Other: _____
Court citations	<input type="checkbox"/> Access	<input type="checkbox"/> Excel	<input type="checkbox"/> Other: _____
Hospital discharge	<input type="checkbox"/> Access	<input type="checkbox"/> Excel	<input type="checkbox"/> Other: _____
EMS reports	<input type="checkbox"/> Access	<input type="checkbox"/> Excel	<input type="checkbox"/> Other: _____
Other:	<input type="checkbox"/> Access	<input type="checkbox"/> Excel	<input type="checkbox"/> Other: _____

4. If the data is stored in a database, is it a centralized database, or specific to your department? Please respond for each type of data collected.

Accident reports	<input type="checkbox"/> Centralized	<input type="checkbox"/> Departmental	<input type="checkbox"/> Other: _____
Road inventory	<input type="checkbox"/> Centralized	<input type="checkbox"/> Departmental	<input type="checkbox"/> Other: _____
Emergency room reports	<input type="checkbox"/> Centralized	<input type="checkbox"/> Departmental	<input type="checkbox"/> Other: _____
Court citations	<input type="checkbox"/> Centralized	<input type="checkbox"/> Departmental	<input type="checkbox"/> Other: _____
Hospital discharge	<input type="checkbox"/> Centralized	<input type="checkbox"/> Departmental	<input type="checkbox"/> Other: _____
EMS reports	<input type="checkbox"/> Centralized	<input type="checkbox"/> Departmental	<input type="checkbox"/> Other: _____
Other:	<input type="checkbox"/> Centralized	<input type="checkbox"/> Departmental	<input type="checkbox"/> Other: _____

5. Is the data analyzed or reported? Please respond for each type of data collected.

Accident reports	<input type="checkbox"/> Analyzed	<input type="checkbox"/> Reported	<input type="checkbox"/> Neither
Road inventory	<input type="checkbox"/> Analyzed	<input type="checkbox"/> Reported	<input type="checkbox"/> Neither
Emergency room reports	<input type="checkbox"/> Analyzed	<input type="checkbox"/> Reported	<input type="checkbox"/> Neither
Court citations	<input type="checkbox"/> Analyzed	<input type="checkbox"/> Reported	<input type="checkbox"/> Neither
Hospital discharge	<input type="checkbox"/> Analyzed	<input type="checkbox"/> Reported	<input type="checkbox"/> Neither
EMS reports	<input type="checkbox"/> Analyzed	<input type="checkbox"/> Reported	<input type="checkbox"/> Neither
Other:	<input type="checkbox"/> Analyzed	<input type="checkbox"/> Reported	<input type="checkbox"/> Neither

Appendix 4 - Traffic Records Data Survey continued

6. Is the data shared with outside agencies (i.e. Arizona Department of Transportation, Indian Health Service, Bureau of Indian Affairs, and Arizona Department of Health Services)? Please respond for each type of data collected.

Accident reports	<input type="checkbox"/> Yes	<input type="checkbox"/> No	With whom?
Road inventory	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Emergency room reports	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Court citations	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Hospital discharge	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
EMS reports	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Other:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

7. Can the data be shared with the BTTSC committee for the purpose of seeking financial and technical assistance resources, writing grants, and making presentations?

Accident reports	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Road inventory	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Emergency room reports	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Court citations	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Hospital discharge	<input type="checkbox"/> Yes	<input type="checkbox"/> No
EMS reports	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other:	<input type="checkbox"/> Yes	<input type="checkbox"/> No

If yes, what formal process is necessary to retrieve the data?

If no, what process must be done to gain access to the data?

Appendix 5 - Arizona Traffic Accident Report Form

ARIZONA TRAFFIC ACCIDENT REPORT		ADOT USE ONLY				REPORT ID				Agency Report Number																																																																																																																																																																																																																
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Trailer (Other Unit) Plate No.			State	Year	Description of Trailer or Other Unit		GVW (Registered) of Power Unit Greater than 10k pounds? <input type="checkbox"/> Yes <input type="checkbox"/> No	HazMat Placard? <input type="checkbox"/> Yes <input type="checkbox"/> No	4-Digit	1-Digit	Was HazMat Cargo Released? <input type="checkbox"/> Yes <input type="checkbox"/> No																																																																																																																																																																																																															
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8	Photos Taken <input type="checkbox"/> Yes <input type="checkbox"/> No																																																																																																																																																																																																																									
	Photographer's Name, ID Number, and Agency _____ Invest. at Scene <input type="checkbox"/> Yes <input type="checkbox"/> No Date Invest. _____ Time Invest. _____																																																																																																																																																																																																																									
Officer's Signature and ID Number _____ Agency _____ Date Completed _____																																																																																																																																																																																																																										

Appendix 5 - Arizona Traffic Accident Report Form continued

9 - DIAGRAM <div style="border: 1px dashed black; height: 200px; width: 100%;"></div>		10 - INDICATE NORTH <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	11 - SKIDDING OCCURRED VEHICLE YES <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 NO <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
13 - DESCRIBE WHAT HAPPENED <div style="border: 1px dashed black; height: 100px; width: 100%;"></div>		12 - CITATIONS UNIT NO. _____ A.R.S. NO. OR CITY CODE _____ 14 - PRIOR ACTION RAN OFF ROADWAY PRIOR TO FIRST HARMFUL EVENT <input type="checkbox"/> YES <input type="checkbox"/> NO RIGHT <input type="checkbox"/> LEFT UNIT NO. _____	
16 - LIGHT CONDITION CHECK ONLY ONE 1 <input type="checkbox"/> DAYLIGHT 2 <input type="checkbox"/> DAWN OR DUSK 3 <input type="checkbox"/> DARKNESS YES NO 1 <input type="checkbox"/> STREET LIGHT 2 <input type="checkbox"/> STREET LIGHT FUNCTIONING		15 - MANNER OF COLLISION CHECK ONLY ONE 1 <input type="checkbox"/> SINGLE VEHICLE 2 <input type="checkbox"/> ANGLE 3 <input type="checkbox"/> LEFT TURN 4 <input type="checkbox"/> RIGHT TURN 5 <input type="checkbox"/> U-TURN 6 <input type="checkbox"/> REAR-END 7 <input type="checkbox"/> HEAD-ON 8 <input type="checkbox"/> SIDESWIPE (SAME DIRECTION) 9 <input type="checkbox"/> SIDESWIPE (OPPOSITE DIRECTION) 10 <input type="checkbox"/> BACKING 11 <input type="checkbox"/> NON-CONTACT MOTORCYCLE 12 <input type="checkbox"/> NON-CONTACT NON-MOTORCYCLE 13 <input type="checkbox"/> PEDESTRIAN 14 <input type="checkbox"/> PEDALCYCLE 15 <input type="checkbox"/> OTHER	
17 - WEATHER CONDITIONS CHECK ONLY ONE 1 <input type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY 3 <input type="checkbox"/> SLEET/ HAIL 4 <input type="checkbox"/> RAIN 5 <input type="checkbox"/> SNOW 6 <input type="checkbox"/> SEVERE CROSSWINDS 7 <input type="checkbox"/> BLOWING SAND, SOIL, DIRT, SNOW 8 <input type="checkbox"/> FOG, SMOG, SMOKE		24 - NON INTERSECTION ROAD CHARACTERISTICS CHECK ONLY ONE 1 <input type="checkbox"/> 2-WAY STRIPED CENTERLINE 2 <input type="checkbox"/> 2-WAY, NO STRIPE 3 <input type="checkbox"/> 2-WAY, PAINTED MEDIAN 4 <input type="checkbox"/> 2-WAY, RAISED MEDIAN 5 <input type="checkbox"/> 2-WAY, CONCRETE BARRIER 6 <input type="checkbox"/> 2-WAY, CABLE BARRIER 7 <input type="checkbox"/> 2-WAY, DEPRESSED MEDIAN 8 <input type="checkbox"/> 2-WAY EXTENDED MEDIAN 9 <input type="checkbox"/> 1-WAY STREET	
18 - ROAD SURFACE TYPE CHECK ONLY ONE 1 <input type="checkbox"/> ASPHALT 2 <input type="checkbox"/> CONCRETE 3 <input type="checkbox"/> GRAVEL 4 <input type="checkbox"/> DRIFT 5 <input type="checkbox"/> OTHER		25 - ROAD GRADE CHECK ONLY ONE 1 <input type="checkbox"/> LEVEL 2 <input type="checkbox"/> DOWNGRADE 3 <input type="checkbox"/> UPGRADE 4 <input type="checkbox"/> HILLCREST 5 <input type="checkbox"/> DIP	
19 - TYPE OF LOCATION CHECK ONLY ONE 1 <input type="checkbox"/> INTERSECTION 2 <input type="checkbox"/> JUNCTION AREA 3 <input type="checkbox"/> NON JUNCTION AREA 4 <input type="checkbox"/> DRIVEWAY ACCESS 5 <input type="checkbox"/> ALLEY ACCESS 6 <input type="checkbox"/> ALLEY		26 - ROAD SURFACE CONDITION CHECK ONLY ONE 1 <input type="checkbox"/> DRY 2 <input type="checkbox"/> WET 3 <input type="checkbox"/> SAND, MUD, DIRT, OIL, GRAVEL 4 <input type="checkbox"/> SNOW 5 <input type="checkbox"/> SLUSH 6 <input type="checkbox"/> ICE 7 <input type="checkbox"/> OTHER 8 <input type="checkbox"/> UNKNOWN	
20 - SPECIAL LOCATION CHECK ONLY ONE 1 <input type="checkbox"/> SCHOOL CROSSING 2 <input type="checkbox"/> PEDESTRIAN CROSSWALK (STRIPED) 3 <input type="checkbox"/> PEDESTRIAN CROSSWALK (NO STRIPING) 4 <input type="checkbox"/> BRIDGE 5 <input type="checkbox"/> TUNNEL 6 <input type="checkbox"/> RR CROSSING 7 <input type="checkbox"/> GORE AREA 8 <input type="checkbox"/> BIKE PATH 9 <input type="checkbox"/> 2-WAY LEFT TURN LANE		27 - CONDITIONS INFLUENCING DRIVER TWO CHOICES PER PERSON MAY BE SELECTED 1 <input type="checkbox"/> 1 2 3 1 <input type="checkbox"/> NO APPARENT INFLUENCE 2 <input type="checkbox"/> HAD BEEN DRINKING 3 <input type="checkbox"/> USE OF ILLICIT DRUGS 4 <input type="checkbox"/> ILLNESS 5 <input type="checkbox"/> FELL ASLEEP/ FATIGUED 6 <input type="checkbox"/> PHYSICAL IMPAIRMENT 7 <input type="checkbox"/> PRESCRIPTION DRUGS 8 <input type="checkbox"/> OTHER 9 <input type="checkbox"/> UNKNOWN	
21 - UNUSUAL ROAD CONDITION CHECK ONLY ONE 1 <input type="checkbox"/> UNDER CONSTRUCTION, TRAFFIC ALLOWED 2 <input type="checkbox"/> UNDER CONSTRUCTION, NO TRAFFIC ALLOWED 3 <input type="checkbox"/> UNDER REPAIRS 4 <input type="checkbox"/> HOLES, RUTS, BUMPS 5 <input type="checkbox"/> OBSTRUCTION - PROTECTED 6 <input type="checkbox"/> OBSTRUCTION - UNPROTECTED 7 <input type="checkbox"/> OBSTRUCTION - UNLIGHTED AT NIGHT 8 <input type="checkbox"/> DEFECTIVE SHOULDERS 9 <input type="checkbox"/> CHANGING ROAD WIDTH 10 <input type="checkbox"/> WATER (STANDING OR MOVING) 11 <input type="checkbox"/> TEMPORARY LANE CLOSURE		28 - VIOLATIONS / BEHAVIOR TWO CHOICES PER PERSON MAY BE SELECTED 1 <input type="checkbox"/> 1 2 3 1 <input type="checkbox"/> NO IMPROPER ACTION 2 <input type="checkbox"/> SPEED TOO FAST FOR CONDITIONS 3 <input type="checkbox"/> EXCEEDED LAWFUL SPEED 4 <input type="checkbox"/> FAILED TO YIELD RIGHT-OF-WAY 5 <input type="checkbox"/> FOLLOWED TOO CLOSELY 6 <input type="checkbox"/> RAN STOP SIGN 7 <input type="checkbox"/> DISREGARDED TRAFFIC SIGNAL 8 <input type="checkbox"/> MADE IMPROPER TURN 9 <input type="checkbox"/> DROVE IN OPPOSING TRAFFIC LANE 10 <input type="checkbox"/> KNOWINGLY OPERATED WITH FAULTY OR MISSING EQUIPMENT 11 <input type="checkbox"/> REQUIRED MOTORCYCLE SAFETY EQUIPMENT NOT USED 12 <input type="checkbox"/> PASSED IN NO PASSING ZONE 13 <input type="checkbox"/> UNSAFE LANE CHANGE 14 <input type="checkbox"/> OTHER UNSAFE PASSING 15 <input type="checkbox"/> INATTENTION 16 <input type="checkbox"/> DID NOT USE CROSSWALK 17 <input type="checkbox"/> WALKED ON WRONG SIDE OF ROAD 18 <input type="checkbox"/> OTHER 19 <input type="checkbox"/> UNKNOWN	
22 - TRAFFIC CONTROL DEVICES CHECK ANY THAT APPLY A - DEVICE OPERATIONAL B - DAMAGED OR NON-FUNCTIONAL PRIOR TO ACCIDENT 1 <input type="checkbox"/> A <input type="checkbox"/> B TRAFFIC SIGNAL 2 <input type="checkbox"/> YIELD SIGN 3 <input type="checkbox"/> STOP SIGN 4 <input type="checkbox"/> WARNING SIGN 5 <input type="checkbox"/> RAILROAD SIGNAL 6 <input type="checkbox"/> FLASHING SIGNAL 7 <input type="checkbox"/> FLAGMAN OR OFFICER		29 - VEHICLE CONDITION TWO CHOICES PER VEHICLE MAY BE SELECTED 1 <input type="checkbox"/> 1 2 3 1 <input type="checkbox"/> NO APPARENT DEFECTS 2 <input type="checkbox"/> DEFECTIVE BRAKES 3 <input type="checkbox"/> DEFECTIVE STEERING 4 <input type="checkbox"/> DEFECTIVE HEADLIGHTS 5 <input type="checkbox"/> DEFECTIVE TAIL LIGHTS 6 <input type="checkbox"/> DEFECTIVE TURN-SIGNAL 7 <input type="checkbox"/> PUNCTURE OR BLOWOUT 8 <input type="checkbox"/> ONE OR MORE SMOOTH TIRES 9 <input type="checkbox"/> FIRE 10 <input type="checkbox"/> DEFECTIVE WINDSHIELD WIPER 11 <input type="checkbox"/> DEFECTIVE EXHAUST SYSTEM 12 <input type="checkbox"/> OTHER DEFECTS 13 <input type="checkbox"/> NO TRAILER BRAKES 14 <input type="checkbox"/> UNKNOWN	
30 - TRAFFIC UNIT ACTION CHECK ONE PER UNIT 1 <input type="checkbox"/> 1 2 3 1 <input type="checkbox"/> GOING STRAIGHT AHEAD 2 <input type="checkbox"/> SLOWING IN TRAFFICWAY 3 <input type="checkbox"/> STOPPED IN TRAFFICWAY 4 <input type="checkbox"/> MAKING LEFT TURN 5 <input type="checkbox"/> MAKING RIGHT TURN 6 <input type="checkbox"/> MAKING U TURN 7 <input type="checkbox"/> ENTERING ALLEY OR DRIVEWAY 8 <input type="checkbox"/> LEAVING ALLEY OR DRIVEWAY 9 <input type="checkbox"/> OVERTAKING/PASSING 10 <input type="checkbox"/> CHANGING LANES 11 <input type="checkbox"/> BACKING 12 <input type="checkbox"/> AVOIDING VEHICLE, OBJECT, PEDESTRIAN 13 <input type="checkbox"/> ENTERING PARKING POSITION 14 <input type="checkbox"/> LEAVING PARKING POSITION 15 <input type="checkbox"/> PROPERLY PARKED 16 <input type="checkbox"/> IMPROPERLY PARKED 17 <input type="checkbox"/> DRIVERLESS MOVING VEHICLE 18 <input type="checkbox"/> CROSSING ROAD 19 <input type="checkbox"/> WALKING WITH TRAFFIC 20 <input type="checkbox"/> WALKING AGAINST TRAFFIC 21 <input type="checkbox"/> STANDING 22 <input type="checkbox"/> LYING 23 <input type="checkbox"/> GETTING ON OR OFF VEHICLE 24 <input type="checkbox"/> WORKING ON OR PUSHING VEHICLE 25 <input type="checkbox"/> WORKING ON ROAD 26 <input type="checkbox"/> OTHER 27 <input type="checkbox"/> UNKNOWN		31 - VISION OBSCUREMENT CHECK ONE PER UNIT 1 <input type="checkbox"/> 1 2 3 1 <input type="checkbox"/> NOT OBSCURED 2 <input type="checkbox"/> BY PARKED/ STOPPED VEHICLE 3 <input type="checkbox"/> BY MOVING VEHICLE 4 <input type="checkbox"/> BY BUILDING 5 <input type="checkbox"/> BY EMBANKMENT 6 <input type="checkbox"/> BY SIGNBOARD 7 <input type="checkbox"/> BY HILLCREST 8 <input type="checkbox"/> BY LOAD ON VEHICLE 9 <input type="checkbox"/> BY TREES, BUSHES 10 <input type="checkbox"/> BY HEADLIGHT 11 <input type="checkbox"/> BY SUN GLARE 12 <input type="checkbox"/> BECAUSE OF BAD WEATHER 13 <input type="checkbox"/> OTHER 14 <input type="checkbox"/> RAIN, SNOW, FOG ON WINDSHIELD 15 <input type="checkbox"/> WINDSHIELD OBSCURED - OTHER 16 <input type="checkbox"/> UNKNOWN	
32 - DIRECTION OF TRAVEL CHECK ONE PER UNIT 1 <input type="checkbox"/> 1 2 3 4 5 6 7 8 9 1 <input type="checkbox"/> NORTH 5 <input type="checkbox"/> NW 2 <input type="checkbox"/> SOUTH 6 <input type="checkbox"/> NE 3 <input type="checkbox"/> EAST 7 <input type="checkbox"/> SW 4 <input type="checkbox"/> WEST 8 <input type="checkbox"/> SE 9 <input type="checkbox"/> UNKNOWN		INJURED TAKEN TO / BY _____	

01-2734-R6/00 BACK

Appendix 5 - Arizona Traffic Accident Report Form continued

DEFINITIONS

Truck - A motor vehicle designed, used or maintained primarily for the transportation of property. For the purpose of this form the vehicle must also meet one of the following criteria:

- Have at least 6 tires on the ground
- OR -
- Carry a Hazardous Material Placard

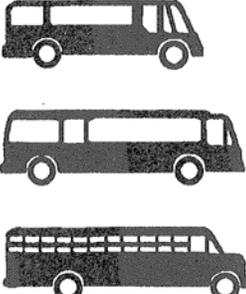
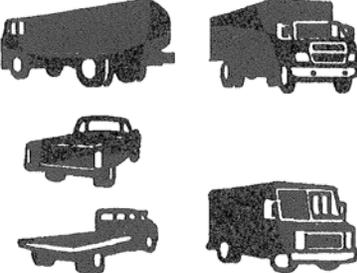
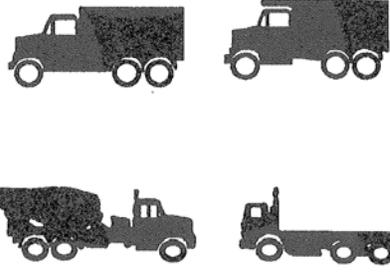
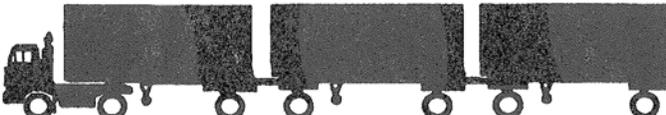
Bus - A motor vehicle providing seats for 16 or more persons including the driver and used primarily for the transportation of persons.

Trailer - A non-power vehicle towed by a motor vehicle.

Reportable Accident - A highway related incident normally investigated by a police officer and reported on a standard accident report form involving one or more trucks or buses (as defined above) which results in:

- One or more fatalities
- OR - ● One or more non-fatal injuries requiring transportation for the purpose of obtaining immediate medical treatment.
- OR - ● One or more of the vehicles being removed from the scene as a result of disabling damage.
- OR - ● One or more vehicles requiring intervening assistance before proceeding under it's own power.

TYPICAL VEHICLE SILHOUETTES

<p>1. Bus</p> 	<p>2. Single Unit Truck - 2 Axle / 6 Tire</p> 	<p>3. Single Unit Truck - 3 Axle</p> 
<p>4. Truck with Trailer</p> 	<p>5. Truck Tractor (Bobtail)</p> 	<p>6. Tractor with Semi-Trailer</p> 
<p>7. Tractor with Double Trailers</p> 		<p>8. Tractor with Triple Trailers</p> 

TYPICAL HAZARDOUS MATERIAL PLACARDS



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