Promoting Positive Traffic Safety Culture in RITI Communities through Active Engagement: Barriers and Opportunities

FINAL PROJECT REPORT

by

Jacob S. Pehrson, Logan Prescott, and Ahmed Abdel-Rahim

National Institute for Advanced Transportation Technology (NIATT)
University of Idaho
875 Perimeter Drive, MS 0901
Moscow, Idaho 83844-0901

for

**In cooperation with U.S. Department of Transportation,
Research and Innovative Technology Administration (RITA)**

DISCLAIMER

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the information presented herein. This document is disseminated under the sponsorship of the U.S. Department of Transportation's University Transportation Centers Program, in the interest of information exchange. The Center for Safety Equity in Transportation, the U.S. Government and matching sponsor assume no liability for the contents or use thereof.

TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.

4. Title and Subtitle	5. Report Date
Promoting Positive Traffic Safety Culture in RITI Communities through Active Engagement: Implementation Guide and Outreach Activities	
	6. Performing Organization Code

7. Author(s) and Affiliations	8. Performing Organization Report No.
Jacob S. Pehrson, Logan Prescott, and Ahmed Abdel-Rahim	INE/CSET 23.05
National Institute for Advanced Transportation Technology (NIATT)	
University of Idaho, 875 Perimeter Drive, MS 0901, Moscow, Idaho 83844-0901	

9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
Center for Safety Equity in Transportation ELIF Building Room 240, 1760 Tanana Drive Fairbanks, AK 99775-5910	
	11. Contract or Grant No.

12. Sponsoring Organization Name and Address	13. Type of Report and Period Covered
United States Department of Transportation Research and Innovative Technology Administration 1200 New Jersey Avenue, SE Washington, DC 20590	
	14. Sponsoring Agency Code

15. Supplementary Notes

Report uploaded to:

16. Abstract

RITI crash data analysis clearly highlights three major areas of concern: prevalence of excessive speed, impaired and distracted driving, and underage driving. Safety-focused educational programs and awareness campaigns have all contributed to a reduction in crashes in urban areas. However, in RITI communities, much more work is still needed. It is important that communities are provided with the proper resources and methods to deliver the appropriate training and educational tools that promote and cause a significant positive change in the traffic safety culture. Through reviewed literature and interviews with tribal community stakeholders, this research team came to understand that tribal youth are most impacted and engaged when educational material is made culturally relevant. We then developed an implementation guide to be used by tribes to create, develop, and enact a sustained educational program with the mission to positively impact traffic safety culture among youth in tribal and rural communities.

17. Key Words	18. Distribution Statement
Crash characteristics, Indian reservations, Indigenous peoples, Impaired drivers, Cultural resources, Outreach, Communities, Community action programs	

19. Security Classification (of this report)	20. Security Classification (of this page)	21. No. of Pages	22. Price
Unclassified.	Unclassified.	23	N/A

Form DOT F 1700.7 (8-72)   **Reproduction of completed page authorized.**

SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
		AREA		
in^2	square inches	645.2	square millimeters	mm^2
ft^2	square feet	0.093	square meters	m^2
yd^2	square yard	0.836	square meters	m^2
ac	acres	0.405	hectares	ha
mi^2	square miles	2.59	square kilometers	km^2
		VOLUME		
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft^3	cubic feet	0.028	cubic meters	m^3
yd^3	cubic yards	0.765	cubic meters	m^3
	NOTE: volumes greater than 1000 L shall be shown in m^3			
		MASS		
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
		TEMPERATURE (exact degrees)		
^oF	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	^oC
		ILLUMINATION		
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m^2	cd/m^2
		FORCE and PRESSURE or STRESS		
lbf	poundforce	4.45	newtons	N
lbf/in^2	poundforce per square inch	6.89	kilopascals	kPa

APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
		AREA		
mm^2	square millimeters	0.0016	square inches	in^2
m^2	square meters	10.764	square feet	ft^2
m^2	square meters	1.195	square yards	yd^2
ha	hectares	2.47	acres	ac
km^2	square kilometers	0.386	square miles	mi^2
		VOLUME		
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m^3	cubic meters	35.314	cubic feet	ft^3
m^3	cubic meters	1.307	cubic yards	yd^3
		MASS		
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
		TEMPERATURE (exact degrees)		
^oC	Celsius	1.8C+32	Fahrenheit	^oF
		ILLUMINATION		
lx	lux	0.0929	foot-candles	fc
cd/m^2	candela/m^2	0.2919	foot-Lamberts	fl
		FORCE and PRESSURE or STRESS		
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in^2

*SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380.
(Revised March 2003)

TABLE OF CONTENTS

LIST OF FIGURES

EXECUTIVE SUMMARY

RITI crash data analysis clearly highlighted three major areas of concern: prevalence of excessive speed, impaired and distracted driving, and underage driving. Specific strategies to reduce motor vehicle crash-related injuries and deaths have been well-documented nationally. Safety-focused educational programs and general awareness campaigns with regard to increased use of occupant restraints, higher visibility traffic enforcement, and stronger laws to address impaired driving have all contributed to reduction in crashes in urban areas. However, in RITI rural communities, where, on average, 30 percent of fatalities occurred due to speeding-related crashes, and 45 percent of all fatalities were related to either impairment and/or distraction and where it is common for children under the age of 16 to drive automobiles in addition to other non-traditional modes of transportation, much more work is still needed. It is incredibly important that RITI communities are provided the proper resources and methods to deliver the appropriate training and educational tools that promote and cause a significant positive change in the traffic safety culture in these communities. The primary goal of the work proposed in this project is to promote and strengthen a positive traffic safety culture among RITI communities in Idaho through active engagement activities. We aim to achieve the following two objectives: document lessons learned from previous active community engagement activities in tribal and rural communities that attempted to promote and positively impact the traffic safety culture in these communities and develop guidelines for best practices to promote and positively impact the traffic safety culture in RITI communities highlighting both opportunities and barriers.

Through reviewed literature and interviews with tribal community stakeholders, this research team came to understand that tribal youth are most impacted and engaged when educational material is made culturally relevant. We then developed an implementation guide to be used by tribes to create, develop, and enact a sustained educational program with the mission to positively impact traffic safety culture among youth in tribal and rural communities.

CHAPTER 1.   INTRODUCTION

1.1.   Project Overview

As part of CSET Year-1 and Year-2 research activities at the University of Idaho, we documented the characteristics of traffic crashes for rural, isolated, tribal, and indigenous (RITI) communities in Idaho and identified possible intervention measures. Our RITI crash data analysis clearly highlighted three major areas of concern: prevalence of excessive speed, impaired and distracted driving, and underage driving. Specific strategies to reduce motor vehicle crash-related injuries and deaths have been well-documented nationally. Educational programs and general awareness regarding increased use of occupant restraints, higher visibility traffic enforcement, and stronger laws to address impaired driving have all contributed to reduction in crashes in urban areas.

However, there is still a great deal of work to be done in RITI communities, where speeding-related crashes account for 30% of all fatalities on average and impairment or distraction accounts for 45% of all fatalities. Children under the age of 16 in RITI communities frequently drive cars and other non-traditional modes of transportation, particularly ATVs. Therefore, it is crucial that RITI communities receive the appropriate resources and approaches for providing the training and educational tools necessary to promote a positive change in traffic safety. The theory of normative social behavior (Rimal, 2005) provides a framework for understanding cultural social norms and different components that impact them (Figure 1). Social norms are observed or perceived patterns that define acceptable beliefs, attitudes, and behaviors. According to Rimal (2005), "Descriptive norms refer to an individual's beliefs about a behavior that are gained as a result of observing the actions of others. Injunctive norms are individual perceptions about the expectations and resulting approval of valued family members or peers. Within this framework, injunctive norms modify the effect of descriptive norms, strengthening it when descriptive and injunctive norms are aligned and reducing or negating it when they are opposed. Furthermore, individual levels of risk perception and sensation seeking may modify the influence of social norms on negative behaviors such as aggressive and/or distracted driving."
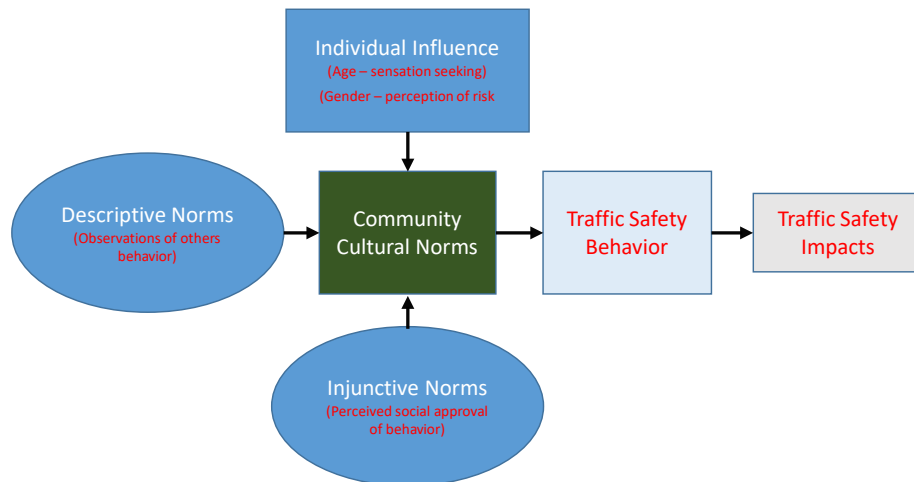

Figure 1 Framework for Normative Social Behavior (Rimal 2005)

Having an engaged and supportive community is crucial for the success of initiatives that aim to promote safe traffic culture. RITI communities in the Pacific Northwest and Idaho come in different

sizes, locations, and socio-demographics, and have varying levels of resources, expertise, and social organization. Additionally, each community has its own distinct social and cultural identity. Despite these unique circumstances, there are two key community engagement lessons we learned through our outreach activities with RITI communities in Idaho and our communication will revolve around these two essential components: 1) Local community "champions" are key to any potential implementation and can make the difference, and 2) sustained and continuous communication help build relationships and trust with communities to achieve the critically needed community support.

1.2. Project Goal and Objectives

The primary goal of the work proposed for this project was to promote and strengthen a positive traffic safety culture among RITI communities in Idaho through active engagement activities. The project had two specific objectives:

1. Document lessons learned from previous active community engagement activities in tribal and rural communities that attempted to promote and positively impact the traffic safety culture in these communities, and
2. Develop guidelines for best practices to promote and positively impact the traffic safety culture in RITI communities highlighting both opportunities and barriers.

The outcomes of this project will support and direct the State of Idaho's efforts to increase safety on Idaho's RITI roadway network and give the US Department of Transportation (USDOT), the Federal Highway Administration (FHWA), and other organizations that focus on increasing safety on rural highways an in-depth knowledge of efficient strategies for increasing active community involvement in rural communities' traffic safety culture.

1.3. Background and Project Methodology

The collected data from RITI communities revealed three areas of concern: the presence of excessive speed, impaired and distracted driving, and underage driving (Abdel-Rahim, 2020). With this understanding, we then considered how to best deliver the necessary tools and methods to provide education outreach on traffic safety. Focusing on the methods that would be most culturally impactful, with education efforts directed toward tribal youth.

We have pursued this with two key lessons in mind. Our initiatives won't be successful unless a community leader in the area stands up for them. Second, in order for community engagement to be successful, stakeholders and organizations need to maintain open, honest, and trusting relationships and partnerships with one another through constant communication. From these two lessons has sprung our efforts to best understand how to positively impact traffic safety culture among tribal youth. The research team conducted extensive literature and traffic safety outreach programs research to better understand the target audience, find the "best practices" of existing programs and learn how culturally integrated education can affect a community, and by interviewing stakeholders withing Idaho tribal communities. We discovered that culturally relevant educational materials have the greatest impact on and engage tribal youth. Therefore, the cultural and historical travel safety practices of the tribe can be utilized in effective educational outreach activities. Our project goals (see Figure 2) have been conceived by working with the tribe and gaining their perspective on our approach to creating,

developing, and implementing a traffic safety-focused educational program that is tailored to the culture.

The project outcomes have a broader national impact through documenting the mobility and traffic safety improvement opportunities for RITI communities that might result from the implementation of active community engagement outreach programs. It also identifies barriers that RITI communities, throughout the nation, might face when implementing ACV technologies.

Understand	Develop	Test
Understand the histories and cultures of the five tribes of Idaho and develop with stakeholders active outreach methods to educate youth and positively impact traffic safety culture.	Develop an implementation guide that can be used by RITI communities throughout Idaho.	Test the effectiveness of different active involvement outreach and education activities in strengthening and promoting positive traffic safety culture.

Figure 2 Project Goals

1.4. Research Approach

1.4.1. Identifying Safety Needs and Active Community Engagement Opportunities

The project team implemented multiple outreach activities to determine the safety risks and needs of the RITI groups. The following is a list of the outreach activities that were conducted throughout this project:

a) To gather information and develop the content of the focus group questioning (described in the following point), interviews were conducted with representatives from stakeholders, targeted groups, and community assistance organizations. These brief interviews investigated the perceived transportation safety and equity challenges and existing solutions for the targeted RITI communities. The targeted audience included individuals from both RITI communities and city bodies.

b) Three focus groups with stakeholders and targeted community groups were conducted as follows:

1. Focus Group 1 was conducted with individuals from indigenous and tribal communities throughout the Pacific Northwest. The questions of this focus group primarily targeted: (1) Determining the major challenges they have with transportation safety and equity and (2) Determining how, when, and

why different options of active-engagement traffic safety education and outreach programs will be accepted.

2. Focus Group 2 was conducted with individuals working with the designated tribes' administration, education, and transportation services. Questions were targeted toward: (1) Determining their views on the major transportation safety and equity challenges, and (2) determining their foreseeable challenges and impacts if active-engagement education and outreach programs are implemented.

c) A wider acceptability survey focused on members from the rest of the society, specifically non-Indigenous and Tribal members, who drove, walked, took the bus, or dealt with any aspect of the transportation system. The survey questions primarily focused on determining their perceptions regarding the implementation of active-engagement safety-education and outreach programs in the community.

1.4.2. Develop a Survey Tool and Conduct In-Depth Interviews

Four to five tribal and rural communities with successful active community engagement programs to promote positive traffic safety culture were selected for in-depth interview with all stakeholders involved in the programs. The survey tool used in the interview was designed to obtain detailed information on barriers and challenges to the programs and best-practices to address these barriers and challenges.

1.4.3. Develop Guidelines for Best Practices

The results of the extensive review and in-depth interview will be used to develop guidelines for best practices for activities that promote positive traffic safety culture for RITI communities. Two round table discussions will be conducted with stakeholders of the communities involved in the survey of this project to verify and validate the developed guidelines.

1.5. Report Organization

This report is organized in five chapters. After the chapter 1 introduction, chapter 2 presents the literature review, the methodology and data sources. The opportunities and challenges of tribal areas in Idaho are documented in Chapter 3, and examples of Cultural-Based traffic safety education and outreach materials are presented in Chapter 4. Chapter 5 includes the study findings and conclusions.

CHAPTER 2.   LITERATURE REVIEW

2.1. Overview

To understand how best to positively impact traffic safety culture among RITI communities, and how to effectively engage tribal youth on the topic, research was conducted in three separate areas. First, existing literature on culture-based education (CBE) and its effectiveness on engaging Native American youth was reviewed. Second, the team conducted extensive interviews with tribal community members and stakeholders including teachers, school administrators, and elders to understand indigenous ways of learning and knowing, as well as gaining a perspective on the existing opportunities and challenges within their communities. Third, the practices and structures of existing traffic safety outreach programs were researched to understand their "best practices and methods."

This research adds to the existing literature, as it incorporates CBE with the topic of traffic safety. The incorporation of culture into educational material is a concept that has long been in development and is centered on keeping Native American students engaged with the learning material, as well as serving as a means of preserving generational, cultural, and historical knowledge (Demmert, 2003). Our developed implementation guide depends greatly on this key fact.

Bruner (1996) states "that culture shapes mind, that it provides us with the toolkit by which we construct not only our worlds but our very conceptions of ourselves and our powers" (Bruner, 1996). The logic here is simple: that experiences can greatly determine outcomes. Growing up in a certain culture or between two cultures can have a significant impact on the choices people make as well as their actions and reactions to events. Bruner elaborates on this concept by stating, "Learning, remembering, talking, imagining - all of them are made possible by participating in a culture" (Bruner, 1996).

From the Native American perspective, in the face of ever increasing and generational cultural erosion, the meaning of integrating culture into educational practices has become ever more apparent. For tribal students to succeed within their own communities, as well as to foster better cross-cultural communication in a country that reflects much diversity, the perspective of many Native American communities is that CBE will serve to develop a well-educated population, invigorating self-determination and supporting individual economic prosperity in a competitive world. This in turn will help to support a generational resumption of knowledge in language, culture, and history (United States, 1991).

Meriam et al. (1928) reflect that a Native American student "needs to have his own tribal, social and civic life used as the basis for an understanding of his place in modern society" (Meriam, 1928). The "Meriam Report" represents an early inclination toward CBE, recommending that Native American communities adopt educational practices that are specific to the needs of their tribe (Meriam, 1928). Giving back control to a community is a very American idea. In this case, it represents a significant shift in public opinion regarding Native American education that was continued throughout the subsequent decades. A blanket education policy focused on "assimilating" Native American society into everyday American society had a devastating effect on the separate cultures of Native American tribes, decreasing generational knowledge of language and history (United States Senate, 1969). Havighurst (1978) noted a significant change in federal Indian policy at the time, stating, "Since 1960 there has been

a growing policy of Indian self-determination in the field of education of Indian youth" (Havighurst, 1978).

The early 1970s saw the passage of the Indian Education Act of 1972 and the Indian Self-Determination and Educational Assistance Act of 1975. Together, these laws codified into law a decades' long shift in policy to afford government funds to Native American tribes to reform their educational institutions, increase the number of Native teachers, and preserve cultural knowledge through the encouragement of culturally integrated education (Havighurst, 1978).

This policy to afford Native Americans more freedom and independence within the education of their communities has been reaffirmed several times in recent decades. The Indian Nations at Risk: An Educational Strategy for Action was published in October of 1991, being a final report by a White House task force. In response to the growing numbers of substance abuse, increased suicide rates, and a degradation in mental health among tribal communities, the report claims, "Unless greater attention is paid to strengthening the physical, mental, and spiritual health of Natives, these problems will continue to multiply…" (United States, 1991).

Through the No Child Left Behind Act of 2001, federal education requirements for Native American and Alaska Native (AIAN) communities provided in the Elementary and Secondary Education Act of 1965 were reauthorized (NCLB, 2002). Whereas there is significant debate on the intended and unintended effects of the No Child Left Behind Act on AIAN communities (Beaulieu, 2005), the federal government supports the idea of developing educational programs that are rooted in culture, with the goal of preserving language and historical knowledge. The team has worked to understand how education can be made culturally relevant to students because the Native American perspective is more important than the government's affirmation of CBE. We discovered that this approach is actively used by tribal educators to instruct their students and further research indicates that CBE in tribal curricula is crucial to the preservation of generational cultural knowledge and effective at keeping students' engagement.

An example of this was provided by a teacher within the Northern Arapaho tribe. In a lesson regarding calculations of a circle, the teacher took her students to a teepee that had been constructed on the grounds of the school. There, the students measured how many buffalo hides it would have taken to cover the structure. They learned how to calculate radius, diameter, and circumference. Additionally, they learned the significance of the buffalo to their ancestors, and how important it was to their sustenance (Pehrson, 2022, Iva Moss).

Riggs (2005), in relation to creating educational curricula for science, acknowledges that "science education in native communities is made harder still by the act that teaching and research styles common to much of science are not automatically compatible with much of the paradigms and institutions of indigenous cultures" (Riggs, 2005).

Diné College on the Navajo Nation has a program that has successfully created culturally specific curricula for its Earth Science program. Working with Semken and Morgan (1997), the college's developed program utilizes traditional Navajo understanding of the environment, nature, and the Earth while relating them directly to Earth science topics. The Navajo language and traditional methods of instruction are also incorporated into the curriculum (Semken, 1997). The example provided by Diné College shows the success that programs can have at strengthening cultural knowledge in education whilst teaching students relevant topics in today's world.

Gilbert (2011) stresses the utilization of a grass-roots approach to gathering cultural information to create authentic culture-based educational materials. He advises the use of primary resources to gather cultural information "that include tribal elders, medicine men and women, respected native community leaders and educators, local cultural experts, and parents – grassroots people" (Gilbert, 2011).

Gilbert's method brought RITI community members together to teach students the different uses of indigenous plants that were significant to their ancestors. With cultural knowledge in hand, students were able to identify the plants that they needed to create different substances. They experimented with various blends of leaves to make teas that were connected to their ancestors, and they were taught important rituals and customs associated with drinking these blends. They also acquired knowledge about the distinct healing properties of certain plant species. (Gilbert, 2011).

These examples provide concrete evidence that culture-based education is utilized in various topics of education throughout Native American communities, and that cultural knowledge can be gained and utilized to increase generational knowledge of these important aspects of Native communities. Topics like mental health, suicide prevention, and even traffic safety can be made culturally relevant to young students, keeping them engaged with the topic and serving to provide needed knowledge on the community's most relevant dilemmas.

Various states have enacted traffic safety outreach programs that have seen considerable participation and positive results among tribal communities. The Montana Department of Transportation has established an exemplary initiative, known as Safe on All Roads (SOAR), which was launched in 2004 in response to the growing recognition of the disproportionate number of Native Americans who were dying in motor vehicle crashes (Montana Department of Transportation, n.d.).

Figure 3 SOAR advertisement (My One Reason For Buckling Up, n.d.).

The goal of the program is to reduce the five-year rolling average of Native American fatalities from 37, 2014-2018, to 24.9 by the final quarter of 2025. To achieve this, SOAR focuses on the negative habits of vehicle occupants and impaired driving. Occupant habits are being addressed by increasing awareness

for seat belt use and child safety seats. Impaired driving is being tackled through the education of young adults and youth (Montana Department of Transportation, n.d.).

SOAR uses multiple forms of advertisement, including newspapers, radio, television, and social media to provide educational outreach (see Figures 2 and 3). The success of SOAR is dependent upon their mission's relevance to tribal communities, support from tribal leaders, participation of youth community leaders, and overall tribal involvement (Cozzie, 2021). Each tribe in Montana has its own SOAR Coordinator who helps to develop each campaign with a tribe, as each tribe has its own unique cultural values. This highlights the significant need of having strong communication and involvement with tribal leadership when developing a message, allowing for greater awareness among the tribe and greater support from the community (Cozzie, 2021).

Figure 4 SOAR advertisement (My One Reason for Buckling Up, n.d.).

Target Zero of the Washington State Department of Transportation (see Figure 5) has the mission to diminish traffic related deaths and serious injuries to zero by the year 2030. From 2008 to 2017 AIAN communities had the highest traffic fatality rate, being approximately four times that of the next closest ethnicity per one hundred thousand in population. Target Zero views that strategies taken to improve the traffic safety culture of tribes must be based on the cultural values and beliefs of each individual tribe. This will serve to foster further growth of the positive culture that already exists (Washington Traffic Safety Commission, 2019).

Figure 5 Target Zero logo (Target Zero, n.d.).

Target Zero's decision to create a Traffic Safety Coordinator position within the Colville tribe proved to be highly successful. The coordinator's responsibilities included updating and analyzing data related to motor vehicle accidents within the tribe, such as fatality and injury rates, and working with the Washington State Patrol and FARS data to map the locations of crashes. This enabled a more comprehensive understanding of traffic safety within the tribe and facilitated the development of effective strategies to address the issue (Washington Traffic Safety Commission, 2019).

Other programs have seen success as well. Together for Life (see Figure 6) is a campaign directed by the Utah Department of Transportation with a mission to increase seat belt usage within several rural communities. This program was designed around each individual community by utilizing local champions and stakeholder involvement. Support came from the Utah Department of Public Safety, Click it Utah, and the Montana State University's Center for Health and Safety Culture to develop customized messages for each community, thus encouraging collaborative discussion and building a collective hope that the community can work together toward positive change (Washington Traffic Safety Commission, 2021).

Figure 6 Together for Life logo (photo by Together for Life, Utah Transportation Department).

For these reasons, the seven counties that Together for Life was employed within saw an increase in seat belt usage of 19.8 percent compared to the statewide average of 8.3 percent (Washington Traffic Safety Commission, 2021). This project is continuously monitored by the Utah Department of Transportation through annual seat belt surveys, and its methodology could be extended to many other Native American tribes.

A common thread that is evident among the best practices of these programs is the significant value they place on culture and community. This indicates that preserving and celebrating cultural identity, and promoting a sense of community is an essential aspect of addressing various social and health issues. To make traffic safety relevant to RITI communities, it is important to consider a tribe's unique culture. This can be done through the many opportunities and challenges that have become apparent to this research team as we have sought to build relationships and bridges of communication with Idaho tribal communities.

CHAPTER 3.   OPPORTUNITIES AND CHALLENGES

In any community, there are both opportunities and challenges that need to be addressed. The focus of this research is to address the issue of traffic safety in RITI communities. To achieve this, the research team has made a concerted effort to learn about the histories and cultures of the Idaho tribes. This involved identifying important stakeholders within these communities and gathering information about their perspectives on the issue. The goal is to use this information to create a traffic safety educational program that is culturally appropriate and engaging for students, while also revitalizing cultural knowledge. The team aims to develop effective activities that keep students engaged and promote a better understanding of traffic safety issues. History and its implications make it necessary for a researcher to be aware of the significance of culture within tribal communities. Today, many tribes are seeing aspects of their cultures disappear due to historical implications and generational change caused by the federal government's previous policy of "assimilating" Native American cultures into mainstream American culture (Hemenway, 2017). Tribal languages present a good example of this. Boseker (2010) claims that "it has been reported that only 206 Native American languages remain … a third of the original number" (Boseker, 2010).

Tribes are significantly aware of this, and so they have become ever more protective of the pieces of their cultures that still thrive. In addition, culture-based education has become an increasingly effective tool at passing on historical and cultural knowledge in the view of Native American educators (Demmert, 2003).

In Idaho, we can see that all tribes revere the land and its resources. They persevered through harsh conditions, traveled from location to location as their needs demanded. They had broad connections with other areas and tribes because of their geographic location. They were reliant on the resources the land provided for food, shelter, and modes to travel. Their societies were highly social, with great respect being given to women, elders, and leaders (Sutton, 2008). Many of these aspects of culture remain today.

With each tribe's unique culture and history in mind, this team then worked through the governmental frameworks to seek out and identify stakeholders under the Four E's of Safety and Compliance (Engineering, Enforcement, Education, and Emergency Services). We succeeded in connecting with community health center leaders, tribal council leaders and elders, tribal youth council members, police officers, and transportation officials. Through these stakeholders, we have sought to answer several different questions, but also to understand the networks of communication and the strength of partnerships that already exist within the community. (The logical flow of this process can be seen in Figure 7).

Through interviews with these stakeholders, we were able to collect insight into how each community viewed the issue at hand, and how to use already existing partnerships to create culturally relevant traffic safety outreach activities. We sought to answer these questions: Does the tribe see a need for this research on their reservation? How does the tribal community view the existing issue? What can be considered "best practices" to educate tribal youth on traffic safety? What is already being done? How can tribal culture and history be related to traffic safety?
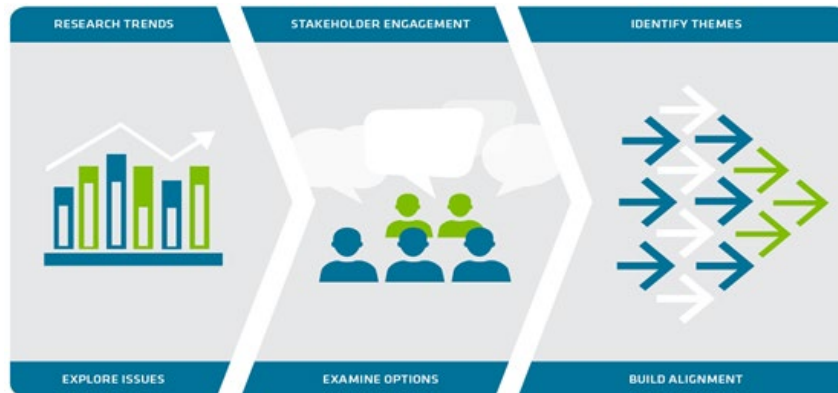
Figure 7 Research and stakeholder identification flow (How it works, stakeholder and community engagement, n.d.).

We have tried to find out from stakeholders whether the tribal community sees the need for this kind of engagement. From our meeting with the Shoshone-Bannock Youth Council, it was posed to the students what they see as being the most immediate and unsafe practice behind the wheel? From their observations of other young drivers, the students agreed that distracted driving in the forms of texting, updating social media, and changing music was prevalent (Pehrson, 2021, Shoshone-Bannock).

Community and tribal member Lindsey Holt added her observations from the Coeur d'Alene tribe. Holt has identified several issues related to road safety on reservations. One of the main concerns is the lack of education on safe pedestrian practices and traffic safety among the community's students. Addressing these issues is crucial to improving road safety and reducing the number of crashes on reservation roads. Due to the vast distances between homes and schools in rural communities, many students in these areas are required to walk to and from school. This has created a need for educational outreach programs that address pedestrian safety and traffic safety in these areas (Pehrson, 2022, Linsey Holt).

Within the Shoshone-Paiute tribe, the police department works with students through the public school system to obtain driver certification. Officers assist in their education as well as final testing. Officials at the police department agree that the community has a need for a sustained traffic safety educational program for its youth, and that it would greatly assist in their already existent efforts (Pehrson, 2021, John Crum).

The examples provided indicate that tribal stakeholders in Idaho are highly cognizant of the traffic safety issues that exist in their communities. They recognize the importance of implementing programs that educate and promote safe driving practices, especially for their youth. We have gained knowledge that some tribes are already attempting to tackle this issue, but that an organized effort headed by a community champion, coupled with strong partnerships, and sustained communication is essential to a beneficial outcome.

Within the governmental frameworks of each tribe, some positive efforts of sustained communication between community members and department leaders can be seen. As with the Shoshone-Bannock tribe, Transportation Director Pete Broncho described specifically how he

works in his position to reinforce traffic safety on reservation roads. He collaborates with the police department to share information about major traffic issues through social media and tribal webpages, keeping tribal members informed and aware. Additionally, Broncho he partners with the community to increase signage where community members see specific dangers (Pehrson, 2021, Pete Broncho).

Pete Broncho's work demonstrates the importance of having effective communication channels to reach members of the community about traffic safety issues. The Coeur d'Alene tribe's Marimn Health organization, through its Boys and Girls Club, offers a range of afterschool activities to children that cover various topics. Additionally, they possess an effective advertising method that provides the community with notices of these activities. Notices are given through social media, tribal webpages, in public schools, and in tribal offices (Pehrson, 2022, Lindsey Holt).

This highlights the importance of utilizing existing programs and resources in implementing effective educational outreach initiatives. Each community has its own unique characteristics and partnerships. In the case of the Shoshone-Bannock, strong partnerships already exist between the public school system, police department, transportation department, and the community at large. This underscores the importance of working with existing networks and building upon established relationships to effectively implement traffic safety education programs. (Pehrson, 2021, Pete Broncho). Partnerships are likewise as strong between the police department and the public school system of the Shoshone-Paiute (Pehrson, 2021, John Crum).

CHAPTER 4.   CULTURE-BASED TRAFFIC SAFETY EDUCATION

Throughout the course of our research, the major question before us was: How can traffic safety education be made culturally relevant? From the examples provided throughout the existing literature and from tribal stakeholders, the answer to this question became quite apparent. In the same way that culture-based education has been applied to various subjects within schools like math, science, and history. This can make the learning process more engaging for students, while also promoting traffic safety and preserving cultural knowledge. The history of travel in the Americas is a rich and diverse one that dates back thousands of years before European contact. Indigenous peoples throughout the Americas had their own modes of transportation, including canoes, sleds, and horses, which allowed them to move across vast distances and interact with one another. Many Indigenous tribes had well-established travel safety practices that were passed down from generation to generation. These practices were designed to ensure the safety of travelers as they journeyed through different environments, including forests, mountains, and waterways. For example, tribes that traveled on canoes often had strict rules about the number of people that could be on board, as well as guidelines for how to navigate through rapids and other dangerous water conditions. They would also carefully monitor the weather and other environmental factors to ensure that they were not putting themselves in danger. As is with many tribes in the Northwest, canoes were an essential mode of travel. The many lakes and rivers in the region provided transportation for both people and goods. The engineering of canoes was specific to the waters they were intended to navigate (see Figure 8). The Spokane and Colville tribes often created dugout style canoes, intended to be used in strong river currents. The Coeur d'Alene and Kootenai tribes, living around larger bodies of water, carved their canoes from white pine bark. They were light in weight, allowing for them to be moved with relative ease. They rode low, with a narrow bow that easily cut through the water (NWMAC, 2022).

Tribes that traveled on foot through mountain passes or other dangerous terrain would have a deep understanding of the land and the potential dangers that could arise, such as avalanches or rockfalls. They would often travel in groups for safety and have specific protocols for setting up camp, navigating difficult terrain, and responding to emergencies.

The specific historical travel safety practices of a tribe can be related to modern traffic safety practices, and thus the importance of how tribes worked so hard to maintain the safety of their families in the past can be highly relevant to young learners the same issues that exist today. While learning how hard their ancestors worked to keep their families safe, tribal youth can understand how to best protect themselves and their families today.

Figure 8 Canoe engineering (Canoe Journey at Kettle Falls, 2016).

The intricacies on the engineering of canoes to have specific designs for specific waters, is a prime example of historical travel safety practices. The canoes were built in mind of the cargo they would be carrying, whether that be needed goods traded with a far-off tribe, or the tribal members themselves. It was essential that these canoes operated safely, as failure would constitute a very great cost to their communities.

When thinking about how Indigenous people used to travel in order to acquire resources, one particular example that comes to mind is the Bitterroot Mountains. Nowadays, these mountains can be easily navigated on a paved Interstate. However, before roads and horses, it was not so easy for Native Americans to make this near perilous journey. By foot they would travel, for it was a necessary endeavor, and members of the Nez Perce, the Coeur d'Alene, and the Kootenai would all make the journey to the rich plains on the other side, where the plains were rich with buffalo. Native Americans traveled an extensive system of ridges, saddles, and game trails (see Figure 9). The danger of getting lost was great, so an expert guide was needed. They would utilize southern slopes where the snow melted more quickly, and the lowlands to establish trails, frequently being rerouted as more efficient routes were discovered. Rock cairns became useful in marking their path (Russel, n.d.).

To ensure safety from enemy tribes, fire became a useful tool. By setting frequently used ridge tops ablaze, the vegetation would become thinned, allowing travelers the ability to see farther through the forest, giving them more adequate visibility to anticipate hostile enemies or dangerous animals (Russel, n.d.).

The introduction of horses in the Bitterroots changed the trail system, requiring wider and relocated trails to accommodate them and ensure consistent water and food sources (Russel, n.d.). Later, when horses were introduced to the Americas, Indigenous peoples became skilled horsemen and developed practices for horse travel that incorporated many of the same safety practices used in other modes of travel. These travel safety practices were essential for the survival and well-being of Indigenous communities, and they continue to be passed down and adapted to this day (Russel, n.d.).
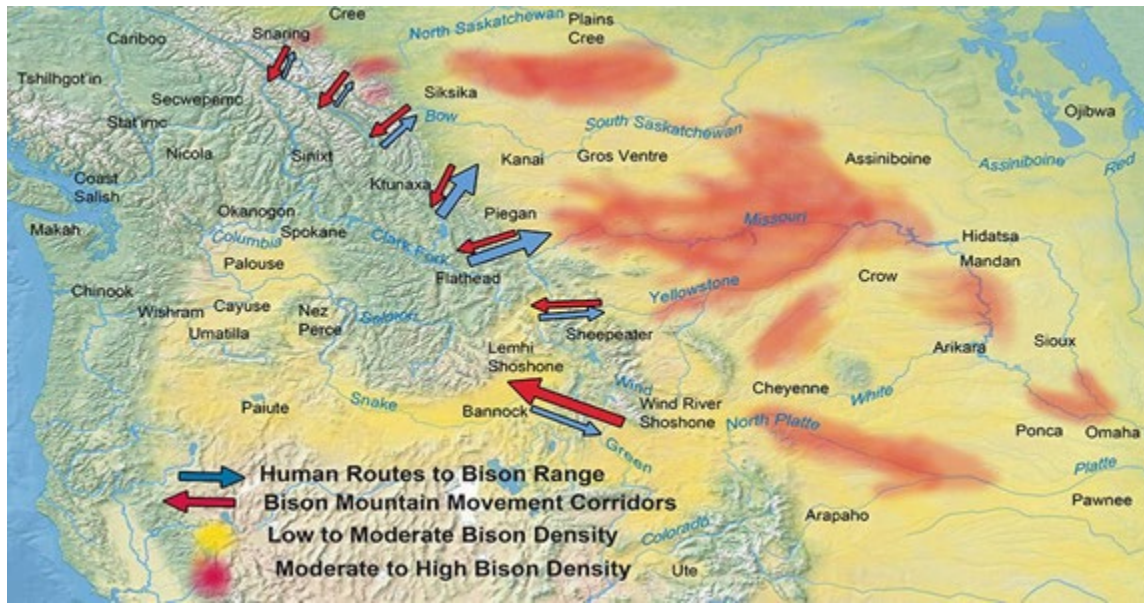
Figure 9 Native American travel over the Rocky Mountains (Valleys of Bison, Rivers of Salmon, n.d.).

These safe methods of travel were essential for tribes on the western side of the Rocky Mountains for they served as a path to the buffalo on the plains. The plains were a gathering place for that specific reason. Native Americans had many methods to hunt buffalo. Alone, they could hunt within a traditional stalk and kill method. Working together they could herd the buffalo into chutes, or (although less common) utilize cliff jumps. Both processes depended on every participant possessing a great amount of concentration, determination, and teamwork.

Buffalo was a vitally important animal for many Native American tribes, providing food, clothing, shelter, and other resources. However, the idea that the Great Plains would often be a dangerous place to venture due to the potential for conflict is not entirely accurate. While conflicts did occur between various tribes, not all encounters were hostile, and many tribes had established trade relationships with one another. Additionally, many tribes had established territories and hunting grounds that were respected by other groups. Intertribal councils and alliances were also formed for mutual protection and defense.

Furthermore, the idea that the Great Plains were a lawless and dangerous place is often rooted in a Eurocentric perspective. Native American societies had their own systems of law and governance that were just as effective at maintaining order and resolving disputes as those of European societies. The buffalo became essential to many tribal cultures, providing food, hides for clothes and shelter, and bones for useful tools. The actual practice of hunting this large and often aggressive animal took skill, patience, and an essential need to protect one's own safety.

Before the introduction of the horse to tribes on the plains, different methods existed for hunting buffalo. One of these was a buffalo cliff jump. This method involved driving a herd of buffalo over a cliff or into a corral, where they could be killed by hunters waiting at the bottom. This method was effective in killing large numbers of buffalo at once, which was important for sustaining the needs of the community. However, it was a complex operation that required careful planning, coordination, and knowledge of buffalo behavior. (Speth, 2017).

Gruesome as it may sound, this method proved most effective at gathering as many buffalo as could be harvested. Bison cliff jumps are referenced in many tribal histories, including that of the Shoshone, Kootenai, and Flathead (Ulm Pishkun, 2005). Paramount to the hunt's success was ensuring one's own individual safety as well as the safety of the other participants.

The small fences would need to be constructed solidly, for if a terrified buffalo escaped, it could cause certain death for any one of the hunters.

While it is true that Native American hunters used a variety of techniques and tools to hunt buffalo, such as bows and arrows, spears, and traps, the description of a hunter dressed as a calf being chased through a maze of small fences is not consistent with traditional hunting practices.

Hunting buffalo was a dangerous and challenging task that required skill, knowledge of the land, and careful planning. Hunters would often work together in groups, coordinating their movements to approach and take down individual buffalo. They would also have to be mindful of the terrain and the behavior of the animals, as buffalo could be unpredictable and dangerous. (Lewis, 1805).

Figure 10 Native American runner during buffalo cliff jump (The Buffalo Jump, n.d.).

It is true that many Native American tribes have oral stories and traditions that speak of individuals with great physical strength, stamina, and determination. These individuals are often referred to as "runners," "warriors," or "heroes," and their stories are passed down through generations as a way to honor and remember their bravery and contributions. In many cases, these stories describe individuals who possess exceptional physical abilities, such as running long distances or carrying heavy loads, as well as mental and emotional fortitude. They are often depicted as courageous and determined, willing to face great challenges and overcome obstacles in pursuit of their goals. These stories reflect the values and traditions of Native American communities, which place a high value on physical fitness, mental toughness, and personal responsibility. They also illustrate the deep connection that many Native

American tribes have to the natural world, as the individuals in these stories are often depicted as having a special relationship with the land and its inhabitants. (Ulm Pishkun, 2005).

These are prime examples of history and culture that can be related to traffic safety principles. More questions can be asked that will provide ever increasing opportunities to create culture-based traffic safety education: How did tribes ensure their own safety when passing through another's territory? What were safe practices while traveling on horseback? Did the tribe possess any ceremonial practices while traveling? What kind of stories were told? What kind of songs were sung?

To develop outreach activities that are tailored to the cultural needs of tribal youth, it is crucial to collaborate closely with the tribe, allowing the tribal stakeholders to take the lead in guiding the process. Asking these questions and gaining those answers will provide tribes the ability to create traffic safety-centric outreach methods and activities that are both culturally and historically relevant.

These were three prime examples of history and culture that can be related to traffic safety principles. The effectiveness of these two examples were evaluated using a small sample that included 17 Native American freshman/sophomore students at the University of Idaho and Washington State University. Through one-on-one interviews, an auditable PowerPoint presentation for one of the two examples was shown to each student. The student was then asked to identify key traffic safety culture elements that can be learned from this culture-based example. The following list includes the elements and guidelines identified by the students from these examples:

- Pre-planning to ensure the safety of all travelers is important.
- The choice of an appropriate, suitable, and safe travel mode for different terrains and roadway conditions is important (ATVs in trails)
- Checking roadway and weather status information before starting the trip is important.
- Don't overload vehicles or ATVs with people or cargo it cannot handle.
- Be aware of the potential of dangerous and hazardous roadway conditions (avalanches, dirt road breaks, etc.)
- Pay attention to driver outreach and education to ensure optimal driving safety practices.

The students were then asked how likely they would commit and abide by the guidelines they identified from watching the example, the average score ranged from 3.9 to 4.6 (with 1 being highly unlikely to commit and 5 being highly likely to commit).

CHAPTER 5.   STUDY FINDINGS AND CONCLUSIONS

Many communities prioritize traffic safety, but in RITI communities, there is a significant problem with speeding, distracted driving, impaired driving, and underage driving. As state and local governments become aware of this issue, so do tribal communities. However, presenting a monologue of doom and pushing solutions onto the community is an outdated and ineffective approach. Effective engagement requires a willingness to learn from the community and to work collaboratively to identify potential solutions. This approach acknowledges the unique knowledge and experiences of the tribe and fosters a sense of trust and respect between all parties involved. By working together, it is possible to develop solutions that are culturally appropriate, effective, and sustainable over the long term. The sovereignty of the tribe, the cultural history of the tribe, the concerns of the tribal community are mechanisms that define the societal issues that are most important to them.

With this fact established, this program implementation guide gives liberty to the tribe to define the issue, determine its compass, and provide the means to combat it. Through culture-based education outreach methods and activities, by organizing and working through existing partnerships and efforts, and through a community champion devoted to the mission, impacting traffic safety culture among RITI youth becomes an achievable goal.

Among Native communities, culture-based education has been shown to preserve cultural knowledge and to keep tribal youth engaged with a topic (Demmert, 2003). The principle of relating personal history and culture to a subject can be applied to various issues within tribal communities. This approach is effective for many areas of public concern, as it helps individuals connect with the subject on a personal level and see its significance in their own lives. Safety is a hallmark of American civilization. To be safe encompasses several different arenas outside the realm of this research. The United States is a country where people from diverse backgrounds share a common belief in the human right to liberty. However, it is disheartening to see that there are those within the country who have been marginalized, neglected, and left out of the American Dream. In some cases, historical, generational, and cultural factors have contributed to their current circumstances. The past has a significant influence on the future, much like a parent's influence on a child, and a complicated past can lead to a challenging future. When speaking with those who are not part of the AIAN (American Indian and Alaska Native) communities, it becomes clear that there is a sense of ambivalence towards the issues faced by these communities in the United States.

The program and implementation guide aim to address areas of mainstream American indifference towards issues faced by AIAN communities. It seeks to preserve cultural knowledge and empower tribes to identify and tackle issues of concern within their communities. By providing a pathway for creating culture-based educational materials, the program can make a significant difference in the lives of AIAN youth. There is a difference between impacting culture and changing culture. While the former involves shaping the future, the latter can be seen as a negative influence stemming from the past. This research team is presenting a model that enhances the ability of tribal communities to define issues, create an education campaign to positively impact these concerns, and preserve their cultural sovereignty.

CITATIONS

Abdel-Rahim, A., Swoboda-Colberg, S., Mohamed, M., & Gonzalez, A. (2020). Documenting the Characteristics of Traffic Crashes for RITI Communities in Idaho.

Beaulieu, D., Sparks, L., & Alonzo, M. (2005). Preliminary report on no child left behind in Indian country. Washington, DC: National Indian Education Association.

Boseker, B. J. (1994). The disappearance of American Indian languages. Journal of Multilingual & Multicultural Development, 15(2-3), 147-160.

Bruner, J. (1996). The culture of education. Harvard University Press.

Canoe Journey and Gathering at Kettle Falls [Photograph]. (2016). Upper Columbia United Tribes, Kettle Falls, WA, United States.

Demmert Jr, W. G., & Towner, J. C. (2003). A Review of the Research Literature on the Influences of Culturally Based Education on the Academic Performance of Native American Students. Final Paper.

Gilbert, W. S. (2011). Developing culturally based science curriculum for Native American classrooms. Honoring our heritage: Culturally appropriate approaches for teaching Indigenous education, 43-55.

Havighurst, R. J. (1978). Indian education since 1960. The Annals of the American Academy of Political and Social Science, 436(1), 13-26.

Hemenway, E. (2017). Native Nations Face the Loss of Land and Traditions (US National Park Service). National Parks Service.

How it works, stakeholder and community engagement [Photograph]. Future IQ, Minneapolis, MN, United States.

Lewis, Meriwether, John Ordway, and Milo Milton Quaife (1965). The Journals of Captain Meriwether Lewis and Sergeant John Ordway: Kept on the Expedition of Western Exploration, 1803-1806. State Historical Society of Wisconsin.

Meriam, L. (1928). The Problem of Indian Administration. Report of a Survey Made at the Request of Honorable Hubert Work, Secretary of the Interior, and Submitted to Him, February 21, 1928.

Montana Department of Transportation. (n.d.). Safe on all roads. Safe on All Roads. Retrieved March 22, 2022, from https://www.mdt.mt.gov/visionzero/plans/soar.aspx

My One Reason For Buckling Up – "Because I Want to Keep My Culture and Traditions Alive" [Photograph]. N.d. Montana Department of Transportation, Helena, MT, United States.

My One Reason For Buckling Up – "Because My Life Matters and So Does Yours" [Photograph]. N.d. Montana Department of Transportation, Helena, MT, United States.

No Child Left Behind (NCLB) Act of 2001, Pub. L. No. 107-110, § 101, Stat. 1425 (2002).

Northwest Museum of Arts and Culture. (2022). Awakenings: Traditional Canoes and Calling the Salmon Home [Museum label]. Spokane, WA.

Pehrson, J. (2021, August 1). Interview with Shoshone-Bannock Youth Council. personal.

Pehrson, J. (2021, August 14). Interview with John Crum. personal.

Pehrson, J. (2021, November 9). Interview with Pete Broncho. personal.

Pehrson, J. (2022, February 4). Interview with Lindsey Holt. personal.

Pehrson, J. (2022, March 4). Interview with Iva Moss. personal.

Prescott, L. (2021, August 27). Interview with Sheila Cozzie. Personal.

Ramal, R., & Real, R. (2005). Love, self-deception, and the moral" must". Philosophy and Literature, 29(2), 379-393.

Riggs, E. M. (2005). Field-based education and indigenous knowledge: Essential components of geoscience education for Native American communities. Science Education, 89(2), 296-313.

Russell, S. F. (n.d.). The Northern Nez Perce Trail. Discover Lewis & Clark. Retrieved February 18, 2022, from https://lewis-clark.org/the-trail/bitterroot-mountains/nez-perce-trail/

Semken, S. C., & Morgan, F. (1997). Navajo pedagogy and Earth systems. Journal of Geoscience Education, 45(2), 109-112.

Speth, J. D. (2017). 13,000 years of communal bison hunting in western North America. In The Oxford Handbook of Zooarchaeology (pp. 525-540). Oxford University Press Oxford.

Sutton M. Q. (2008). An Introduction to Native North America (3rd ed.). Pearson.

Target Zero [Photograph]. N.d. Washington Traffic Safety Commission, Olympia, WA, United States.

The Buffalo Jump [Photograph]. N. d. Native American Roots.

Together for Life [Photograph]. N.d. Utah department of Public Safety Highway Safety Office, Salt Lake City, UT, United States.

Ulm Pishkun Advisory Committee and Montana Fish, Wildlife and Parks. (2005). (rep.). Ulm Pishkun State Park Management Plan (pp. 1–58). Helena, Montana.

United States Senate (1969). Indian education: A national tragedy, a national challenge. 1969 report of the Committee on Labor and Public Welfare Special.

United States. (1991). Indian nations at risk: an educational strategy for action: final report of the Indian nations at risk task force. U.S. Department of Education.

Valleys of Bison, Rivers of Salmon [Photograph]. N.d. Lens of Time Northwest, Seattle, WA, United States.

Washington Traffic Safety Commission. (2019). Washington State Strategic Highway Safety Plan: Target Zero 2019. Retrieved from Target Zero – Washington's Strategic Highway Safety Plan.

Washington Traffic Safety Commission. (2021). The importance of developing traffic safety culture. Toward Zero Deaths. Retrieved March 24, 2022, from https://www.towardzerodeaths.org/traffic-safety-culture/