Promoting Positive Traffic Safety Culture in RITI Communities through Active Engagement: Implementation Guide and Outreach Activities

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

Center for Safety Equity in Transportation (CSET)
USDOT Tier 1 University Transportation Center
University of Alaska Fairbanks
ELIF Suite 240, 1764 Tanana Drive
Fairbanks, AK 99775-5910

**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	June 2024
	6. Performing Organization Code

7. Author(s) and Affiliations	8. Performing Organization Report No.
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	INE/CSET 23.05

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

Rural, Indigenous, Tribal, and Isolated (RITI) communities' 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.	19	N/A

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)		
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
		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)		
°C	Celsius	1.8C+32	Fahrenheit	°F
		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

Rural, Indigenous, Tribal, and Isolated (RITI) communities' 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

Crash data analyses for Indigenous and Tribal communities in the state of Idaho have highlighted three major areas of concern: prevalence of exercise speeding, impaired and distracted driving, and underage driving (Abdel-Rahim et al., 2020). Specific strategies to reduce motor vehicle crash-related injuries and deaths have been well-documented nationally. Educational programs and general awareness regarding the increased use of occupant restraints, higher visibility traffic enforcement, and stronger laws to address impaired driving have all contributed to a reduction in crashes in urban areas. However, there is still a great deal of work to be done within Indigenous and Tribal communities, where speeding-related crashes account for 30 percent of all fatalities on average, while impairment or distraction accounts for 45 percent of all fatalities. Furthermore, children under the age of 16 in these communities frequently drive cars and other non-traditional modes of transportation, particularly ATVs (Abdel-Rahim et al., 2020). Thus, the communities of focus in this study could benefit from the resources and guidelines presented in this report by developing and implementing the training, educational, and outreach tools necessary to promote a positive change in the traffic safety culture, especially for younger drivers in the community.

The theory of normative social behavior provides a framework for understanding cultural social norms and different components that impact them. Social norms are observed or perceived patterns that define acceptable beliefs, attitudes, and behaviors. Figure 1 shows the community's social norms and their traffic safety impacts adapted from the definitions of Rimal and Real (2005).

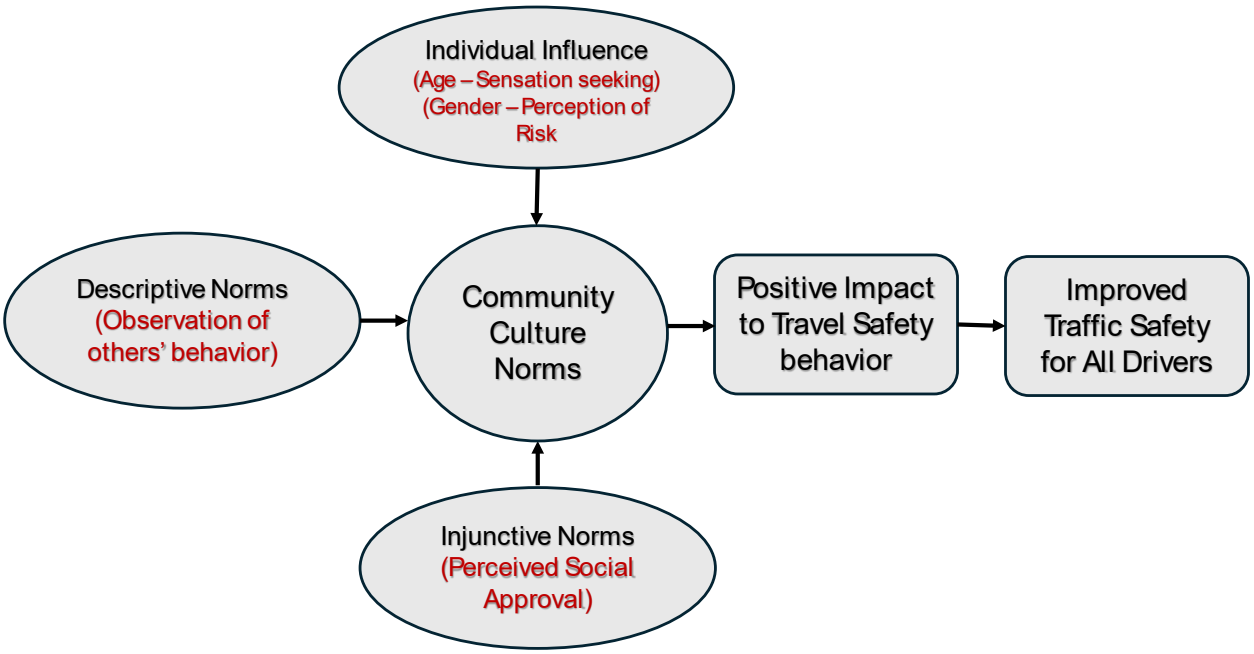

Figure 1 Framework for Normative Social Behavior (Adapted from Rimal and Real (2005))

The work presented in this report aims to promote and strengthen the positive traffic safety culture among younger drivers in Indigenous and Tribal communities through active engagement activities. We first documented lessons learned from previous active community engagement activities in tribal

communities that attempted to promote and positively impact the traffic safety culture through heritage-based education and outreach materials highlighting both opportunities and challenges for such active-engagement education and outreach approach. Then we developed and conducted preliminary testing for two examples of education and outreach materials to promote and positively impact the traffic safety culture for younger drivers in Indigenous and Tribal communities using heritage-based materials. Results from the preliminary testing and feedback from different participants were analyzed to assess the potential effectiveness of the proposed heritage-focused approach.

This report is organized into six sections. After the introduction, section two presents the study methodology, followed by a synthesis of previous work in section three. The opportunities and challenges of tribal areas are documented in section four. Examples of heritage-based traffic safety outreach and education materials are presented in section five, followed by the study's findings and conclusions.

1.2. Study Methodology

Crash rate data for Indigenous and Tribal communities revealed three areas of concern: the presence of excessive speeding, impaired and distracted driving, and underage driving (Abdel-Rahim et al., 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 study with its emphasis on a heritage-focused approach with two key lessons in mind. First, our initiatives are contingent upon the advocacy of a local community leader. Second, for community engagement to be successful, stakeholders and organizations need to maintain open, honest, and trusting relationships and partnerships through constant communication (Men et al., 2014).

The research team implemented multiple outreach activities to determine the safety risks and needs of the Indigenous and Tribal groups. The protocol for this research was reviewed, certified, and approved by the University of Idaho's Institutional Review Board (IRB). The following is a list of the outreach activities that were conducted as part of this work:

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 Indigenous and Tribal communities. The targeted audience included individuals from both Indigenous and Tribal communities and city bodies.

b) Two 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.

CHAPTER 2. SYNTHESIS OF PREVIOUS WORK

2.1. Overview

To understand how best to positively impact traffic safety culture among Indigenous and Tribal 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 in engaging Native American youth were 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 gain 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."

2.2. Cultural-Based Education and Outreach Practices

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 et al., 2003). Bruner (1996) states "culture shapes mind, 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, p. x). The logic here appears 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, p. xi).

From the Native American perspective, in the face of ever-increasing and generational cultural erosion, the need for integrating culture into educational practices has become ever more apparent. The viewpoint of many Native American communities is that CBE will serve to develop a well-educated population, revive self-determination, and support individual economic prosperity in a dynamic world. This will help tribal students succeed within their communities as well as foster better cross-cultural communication in a country that reflects a great deal of diversity. 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, p. 372). 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). This represents a significant change in federal Indian policy at the time, noted by Havighurst (1978), "Since 1960 there has been a growing policy of Indian self-determination in the field of education of Indian youth" (Havighurst, 1978, p. 13). The blanket education policy historically adopted by the United States, focused on "assimilating" Native American society into everyday American society. This had a devastating effect on the separate cultures of Native American tribes, decreasing generational knowledge of language and history (United States Senate, 1969).

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 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).

In recent decades, this policy of providing Native Americans with more freedom and independence in the education of their communities has been repeatedly reaffirmed. The Indian Nations at Risk: An Educational Strategy for Action, the final report of a White House task force, was released in October 1991. 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, p. 5).

Through the No Child Left Behind Act (NCLB) 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 NCLB on AIAN communities (Beaulieu et al., 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. Our research team has worked to understand how education can be made culturally relevant to Native American students. We discovered that this approach is actively used by many 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 engaged.

An example of this was provided by a teacher within the Northern Arapaho tribe. In a lesson regarding the 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 (I. Moss, personal communication, March 4, 2022).

When speaking about creating educational curricula for other standard subjects like science, Riggs (2005) 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, p. 297). Diné College in 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 & Morgan, 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, p. 46). Gilbert’s method brought Indigenous and Tribal 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. Challenges to the communities like mental health, suicide prevention, and even traffic safety can be made culturally relevant to young students, keeping them engaged and providing them with the knowledge needed to overcome these challenges.

2.3. Education and Outreach Programs Positively Impacting Tribal Traffic Safety

Various states have enacted traffic safety outreach programs that have seen considerable participation and positive results among tribal communities. The Montana Department of Transportation (MDT) 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.).

The goal of the program is to reduce the five-year rolling average of Native American fatalities from 37, in 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 of 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.).

Figure 2 SOAR advertisement "My One Reason for Buckling Up"

SOAR uses multiple forms of advertisement, including news reports, radio, television, and social media to provide educational outreach (Figure 2). The success of SOAR is dependent upon its mission's relevance to tribal communities, support from tribal leaders, participation of youth community leaders, and overall tribal involvement. Each tribe in Montana has its SOAR Coordinator who helps to develop each campaign with a tribe, as each tribe has its unique cultural values. Sheila Cozzie, Cultural Liaison for MDT, notes that one difficulty facing the program is the high turnover rate in this position, highlighting 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 (S. Cozzie, personal communication, August 27, 2021).

West of Montana, Washington State Department of Transportation's Target Zero initiative is dedicated to reducing traffic-related fatalities and severe injuries to zero by the year 2030. From 2008 to 2017, AIAN communities in Washington State 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 tribe. Target Zero implemented the Traffic Safety Coordinator position within the Colville tribe whose responsibilities included updating and analyzing data related to motor vehicle accidents within the tribe. This direct traffic safety role within the tribal community 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). 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 Indigenous and Tribal communities, it is important to consider a tribe's unique culture.

2.4. Identifying Opportunities and Challenges

To address the issue of traffic safety in Indigenous and Tribal communities, it is important to utilize the history and culture of the tribe to identify stakeholders that will afford different perspectives on the issue. History and its implications make it necessary for anyone developing educational materials to be aware of the significance of culture within tribal communities. Today, many tribes are seeing aspects of their cultures disappear, exacerbated by historical federal policy and generational change (Hemenway, 2017). Tribal languages present a good example of this. Boseker (1994) claims that "it has been reported that only 206 Native American languages remain … a third of the original number" (Boseker, 1994). 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 for passing on historical and cultural knowledge in the view of Native American educators (Demmert et al., 2003).

Many of these aspects of culture remain today, and with each tribe's unique culture and history in mind, we connected with community health center leaders, tribal council leaders and elders, tribal youth council members, police officers, and transportation officials in different tribes. Through these stakeholder interviews, we have sought to obtain answers to several questions aimed at understanding the strength of partnerships that already exist within the community, as well as their existing networks of communication. We were able to collect insights into how each community viewed the issue at hand,

and how to use existing resources and partnerships to create culturally relevant traffic safety outreach activities. We sought to answer these questions: 1) Does the tribe see a need for this research on their reservation? 2) How does the tribal community view the existing traffic safety issue? 3) What can be considered “best practices” to educate tribal youth on traffic safety? 4) What is already being done? and 5) How can tribal culture and history be related to traffic safety?

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 form of texting, updating social media, and changing music were prevalent (Shoshone-Bannock Youth Council, personal communication, August 1, 2021).

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. Due to the vast distances between homes and schools in rural communities, many students walk to and from school. (L. Holt, personal communication, February 4, 2022).

Within the Shoshone-Paiute tribe, the police department works with students through the public-school system to obtain driver’s licenses. 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 education program for its youth and that it would greatly assist in their already existent efforts (J. Crum, personal communication, August 14, 2021).

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. Yet organized efforts headed by a community champion, coupled with strong partnerships, and sustained communication are essential for the best outcomes.

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 web pages, keeping tribal members informed and aware. Additionally, Broncho partners with the community to increase signage where community members see specific dangers (P. Broncho, personal communication, November 9, 2021).

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 notice of these activities. Notices are given through social media, tribal web pages, public schools, and tribal offices (L. Holt, personal communication, February 4, 2022).

Each Native American community within Idaho has 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 (P. Broncho, personal communication, November 9, 2021). Partnerships are likewise as strong between the police department and the public-school system of the Shoshone-Paiute (J. Crum, personal communication, August 14, 2021). Through these existing partnerships, stakeholders can work to create culture-based education materials and outreach methods that are tailored to their own tribal identities.

CHAPTER 3. CULTURE-BASED TRAFFIC SAFETY EDUCATION

3.1. Examples of Heritage-Based Traffic Safety Outreach and Education Materials

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 tribal stakeholders, the answer to this question became quite apparent. It can be done 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 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.

3.2. Example-1: Travel Using Canoes

Tribes that traveled on canoes often:

i. had strict rules about the number of people that could be on board,

ii. had clear guidelines for how to navigate through rapids and other dangerous water conditions,

iii. carefully monitored the weather and other environmental factors to ensure that they were not putting themselves in danger.

Figure 3 Canoe engineering: Dugout style canoes typical of the Spokane and Colville tribes

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 (Figure 3). 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 them to be moved with relative ease. They rode low, with a narrow bow that easily cut through the water (Northwest Museum of Arts and Culture, 2022).

The intricacies of 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. These canoes needed to operate safely, as failure would constitute a very great cost to their communities.

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 seeking knowledge on the same issues that exist today.

3.3. Example 2: The Bitterroot Mountains Travel Practices

The Bitterroot mountains stand as a formidable mountain range that can be easily navigated on a paved interstate today. 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 other side, where the plains were rich with buffalo (Russel, n.d.).

Native Americans traveled an extensive system of ridges, saddles, and game trails, (Figure 4). 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 trails that often had to be relocated to ensure consistent water and food sources. 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.).

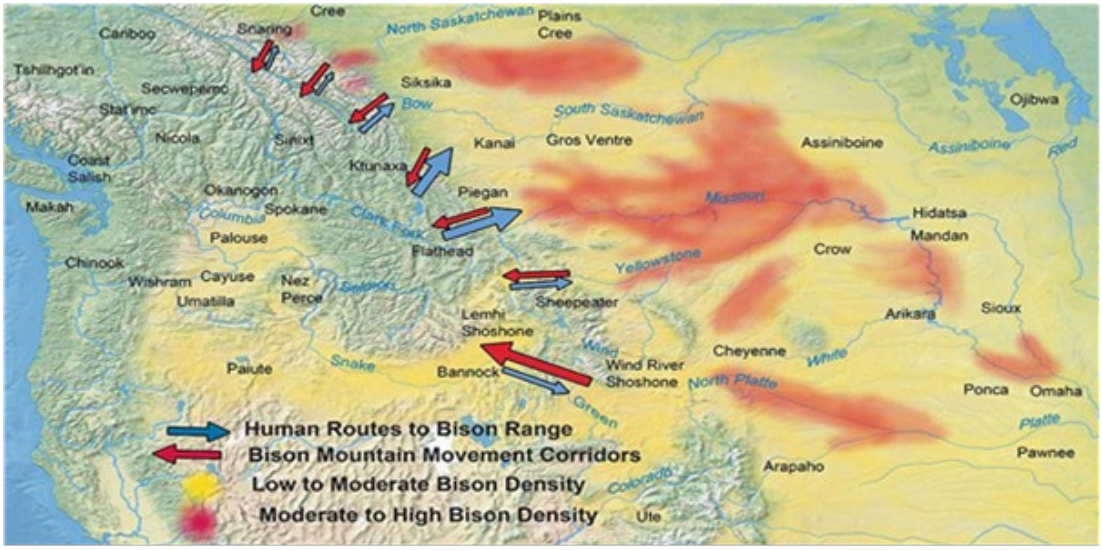

Figure 4 Paths historically used by Native Americans to traverse the Rocky Mountains

These are two 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 and 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 the two examples:

i. Pre-planning to ensure the safety of all travelers is important.
ii. The choice of an appropriate, suitable, and safe travel mode for different terrains and roadway conditions is important (ATVs in trails).
iii. Checking roadway and weather status information before starting the trip is important.
iv. Do not overload vehicles or ATVs with people or cargo it cannot handle.
v. Be aware of the potential of dangerous and hazardous roadway conditions (avalanches, dirt road breaks, etc.).
vi. 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, the average score ranged from 3.9 to 4.6 (with 1 being highly unlikely to commit and 5 being highly likely to commit). Figure 5 illustrates these results.

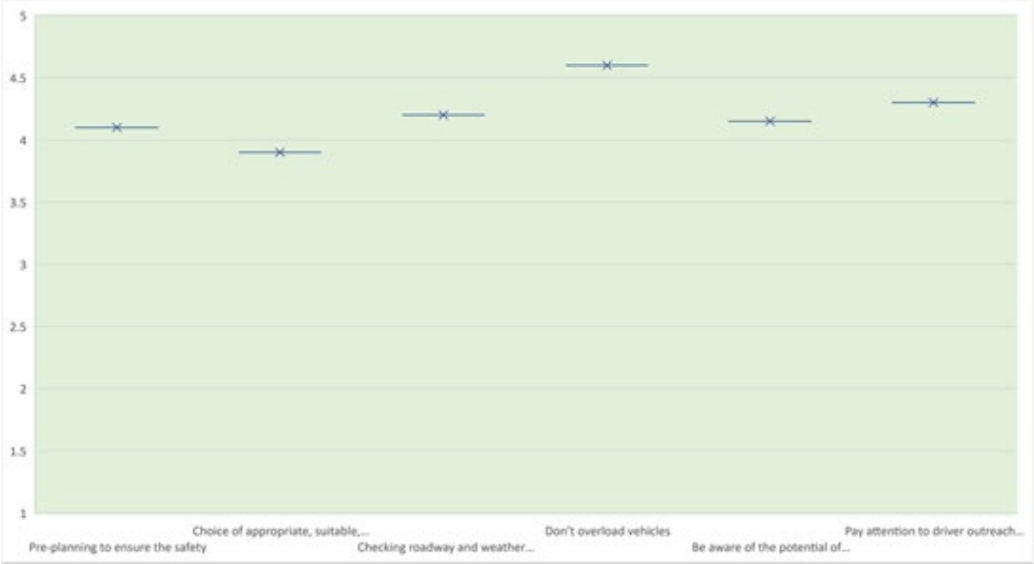

Figure 5 Average Response Values for likelihood of commitment to Traffic Safety Guidelines Identified in the Culture-Based Outreach Materials

With a high likelihood of committal to the traffic safety guidelines identified by this sample, it becomes apparent that tribes could benefit from developing outreach activities that are tailored to the cultural needs of tribal youth. To do this, it is crucial to collaborate closely with the tribe, allowing the tribal stakeholders to take the lead in guiding the process. Information that is both culturally and historically relevant can then be utilized to develop traffic safety-centric outreach methods and activities that have a high likelihood of becoming relevant to tribal youth.

CHAPTER 4. CULTURE-BASED TRAFFIC SAFETY EDUCATION AND OUTREACH: IMPLEMENTATION GUIDE

Creating and implementing a culture-based traffic safety education and outreach program, like any other community intervention program, can only be successful if 1) it is led by a champion devoted to the mission, 2) if it sustains strong partnerships with stakeholders and effective communication between parties, and 3) if it continues to maintain communication and outreach methods with the community. The goals and mission of the education and outreach program will be the driving force behind the efforts of the people who engage in its creation and implementation. This service to the Rural, indigenous, Tribal, and Isolated (RITI) communities is best done by creating a heritage and culture-based traffic safety education and outreach program that educates, promotes, and preserves cultural knowledge and heritage while, at the same time, increases traffic safety awareness among RITI communities.

The first step in the research work presented in this report was to identify the education and outreach needs for RITI communities. Through interviewing stakeholders within different Idaho's tribal communities, the project team was able to gain the understanding that such need is boundless, and that tribal community members and leaders have been extremely interested in engaging youth on traffic safety education that is culturally significant while preserving and promoting the heritage of the tribes.

All too important for those conducting research with and within tribal and RITI communities is to be aware of how historical implications have affected the relationship of trust that exists between AIAN communities and those of mainstream American culture. Many recent examples of research being misused to influence, mitigate, propagate, or further the cause to assimilate the American Indian into American culture can be found in Thomas (2009).

Thomas et. al (2009) states, "These issues need to be viewed within the context of postcolonial oppression of AIAN peoples, with loss of lands, suppression of language and culture, lack of recognition of sovereignty, and disregard for personal and communal rights." Simply put, the misuse of research garnered from a sovereign Native American tribe is unacceptable. It only works to affirm violations of the past as being continual and does nothing to help build inter-community relationships reliant on mutual trust and respect. It is important to work with the tribe and from the perspective of the tribe on the issue at hand.

Once a need is established, working from the tribe's perspective becomes a key lens when creating and implementing culture-based outreach methods and activities. Each community has its own history, culture, and specific needs, as well as its own government and politics. To effectively identify key stakeholders and build lasting partnerships, the tribe must be devoted to impacting traffic safety culture within their own communities. Working with tribal stakeholders in the "driver's seat" becomes all too important when the specific needs and cultures of each community is different.

Through the governmental framework of a tribe, one can identify community leaders who can give perspective on the issue. Through tribal departments of education, transportation, and law enforcement, this team was able to identify stakeholders, seek out and identify existing partnerships, and identify where to build lasting partnerships. Working within the confines of the governmental

framework of the tribe will help to identify those stakeholders that will be most devoted to the mission of the program, revealing how and where existing partnerships can be utilized, and creating relationships that can illuminate new stakeholders that represent different areas of knowledge.

To build and sustain those partnerships, honest and consistent communication between parties becomes key not only to the success of the partnership, but to the success of the program. Since the program's activities and methods must be developed from the perspective of the tribe, tribal stakeholders must have a communal devotion to its mission, and this starts with separate stakeholders or organizations building strong relationships built on mutual trust, openness, and awareness; key to this is honest and consistent communication.

With stakeholders identified and partnerships built around a common cause, it becomes necessary to appoint a community champion devoted to the mission. In a program working to positively impact traffic safety culture among youth, the community champion will make the program's mission his or her own. This champion will work to organize stakeholders and partnerships to deliver on the program's goals and continually developing and maintaining lasting partnerships. This champion must be a person capable of seeing that all aspects of the program are implemented, devoted to seeing its success, and equally devoted to the community and its youth.

It would then be upon the community champion to work with stakeholders in overall program development, or to identify project infrastructure and goals. The champion can work with stakeholders to further define community needs to build structure to the program, giving further understanding to cost, funding, and budgetary necessities. The extent of volunteer work can be identified. Working through already existing partnerships allows the champion to ascertain where community efforts have already been successful, thereby making the program more cost-effective.

Existing partnerships can be seen between police departments and public-school systems, between transportation departments and community members, and between local community centers and tribal councils. The various existing partnerships become the vehicle through which traffic safety outreach can be achieved.

Central to program infrastructure are its goals. As goals must be tailored to each community, the involvement of the champion in fostering relationships centered around a specific mission becomes necessary for all stakeholders to give unimpeded feedback on tribal needs that will identify the areas of most concern. These areas will help to tailor program goals to the specific needs of the community.

Through roundtable discussions, continued communication between stakeholders, and by working with tribal elders and educators, the ability to seek out and identify cultural stories, practices, or ceremonies that can be related to the importance of traffic safety practices today becomes an exciting and fascinating process. The community champion is now met with the question: How does one relate culture and history to traffic safety education?

To create culture-based education and outreach methods, it is necessary for stakeholders who have experience in creating educational material to be involved, as well as those who are most knowledgeable about the tribe's culture. This will ensure that cultural knowledge is preserved to its greatest ability, as well as ensure the most relevant examples are used in relation to traffic safety.

When creating a program for RITI communities, the "guts" of the program must be highly tailored to each tribe, for each is different. One cannot assume that the Coeur d'Alene are the same as the Nez Perce just because they live next to each other geographically. In fact, they are very different. Different in spirituality, different in practices, different in language, and even different on interpretations of today's world. It is almost akin to Europe, where one can leave a country the size of an American county and be in another place that speaks a different language, follows a different custom, and identifies with a different history. All that person did was travel a few miles, but the culture is different, presenting a different set of beliefs and customs.

Much of mainstream America might have forgotten that this phenomenon exists within the United States as well. The pain of the American people exists not just within the mainstream culture, but also in the 574 other sovereign nations that exist within this country's borders. As well, just as issues are not the same in York, Nebraska as they are in York, Pennsylvania, so issues are the same between one tribe to the next.

For this program to be successful, the tribe must see a need for its mission. The tribe must organize to identify stakeholders, understand the extent of existing efforts and partnerships, seek out and appoint a champion to carry the program's mission, research and develop activities that are culture-based, thus developing a program that is specific to the tribe. It is then that program implementation can begin, and with culture-based outreach methods and activities developed to keep youth engaged, surely, traffic safety culture will be positively impacted, and youth will see how tribal cultural practices enhance the importance of traffic safety practices. In summary, the following nine steps are recommended to establish heritage and culture-based traffic safety education and outreach programs, for RITI communities:

1) Identify a need within the community.
2) Work with the tribe and from the perspective of the tribe.
3) Identify key stakeholders.
4) Identify existing partnerships.
5) Build lasting partnerships.
6) Appoint a community champion devoted to the mission.
7) Identify project infrastructure and goals (i.e. location for activities, funding, budget, staff, mission).
8) Create culture-based education and outreach methods
9) Program implementation.

CHAPTER 5. STUDY FINDINGS AND CONCLUSIONS

Past crash rate studies have shown that Indigenous and Tribal communities have significant traffic safety problems that is caused by excessive speeding, distracted, and impaired driving, and underage driving. Effective and active community engagement in traffic safety education and outreach activities has been proven to reduce both the number and severity of traffic crashes by positively impacting the traffic safety cultural norms for all drivers, especially younger drivers. Effective engagement programs require a willingness to learn from the community and to work collaboratively with community leaders and different stakeholders to identify potential solutions.

In this report, we presented the development and preliminary testing of heritage-focused education and outreach materials with the objectives of positively impacting the traffic safety culture for the indigenous communities focusing on younger drives. The overall objective of this effort is to reduce the number and severity of traffic crashes impacting these communities. The approach presented in this report includes involving local community leaders in traffic safety education and incorporating culturally based material in outreach and education activities.

The results of the preliminary testing of two heritage-based education and outreach materials developed as part of this study showed promising results indicating that the proposed heritage-based approach could empower tribal communities to preserve their cultural identities while acquiring the expertise needed to promote traffic safety.

The proposed approach acknowledges and highlights the unique knowledge and experiences of the tribe and fosters a sense of trust and respect between all parties involved. The examples presented in this report also show that by working together, it is possible to develop solutions that are culturally appropriate, effective, and sustainable over the long term. 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 Indigenous and Tribal youth becomes an achievable goal.

CITATIONS

Abdel-Rahim, A., Swoboda-Colberg, S., Mohamed, M., & Gonzalez, A. (2020). Documenting the Characteristics of Traffic Crashes for RITI Communities in Idaho. https://rosap.ntl.bts.gov/view/dot/54654

Beaulieu, D., Sparks, L., & Alonzo, M. (2005). Preliminary report on no child left behind in Indian country. *Washington, DC: National Indian Education Association*. https://narf.org/nill/resources/education/reports/29.23.NIEANCLBreport_final2.pdf

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. https://ucut.org/fish/canoe-journey-gathering-kettle-falls/

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. https://educationnorthwest.org/sites/default/files/cbe.pdf

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. https://jan.ucc.nau.edu/~jar/HOH/HOH-3.pdf

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*. https://www.nps.gov/articles/negotiating-identity.htm

Men, L. R., & Tsai, W. H. S. (2014). Perceptual, attitudinal, and behavioral outcomes of organization–public engagement on corporate social networking sites. Journal of public relations research, 26(5), 417-435.

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. https://files.eric.ed.gov/fulltext/ED087573.pdf

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.

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.

Rimal, R. N., & Real, K. (2005). How behaviors are influenced by perceived norms: A test of the theory of normative social behavior. Communication Research, 32(3), 389-414

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.

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

United States Senate (1969). Indian education: A national tragedy, a national challenge. *1969 report of the Committee on Labor and Public Welfare Special*. https://files.eric.ed.gov/fulltext/ED034625.pdf

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. https://narf.org/nill/resources/education/reports/nationsatrisk.pdf

Valleys of Bison, Rivers of Salmon [Photograph]. N.d. Lens of Time Northwest, Seattle, WA, United States, https://lensoftimenorthwest.com/themes/salmon-and-bison/

Washington Traffic Safety Commission. (2019). *Washington State Strategic Highway Safety Plan: Target Zero 2019*. Retrieved from Target Zero – Washington's Strategic Highway Safety Plan. https://wsdot.wa.gov/construction-planning/statewide-plans/strategic-highway-safety-plan-target-zero