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Traffic Fatalities:SR 155 on Colville Reservation

TRAFFIC SAFETY ISSUES OF STATE HIGHWAY 155 THROUGH THE COLVILLE RESERVATION: AN EISENHOWER RESEARCH REPORT

Traffic Safety Issues on State Highway 155 through the Colville Reservation

This is the Final Report for the Eisenhower Tribal Transportation Fellowship Program, US DOT.

By:

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Traffic Safety Issues on State Highway 155 through the Colville Reservation

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Abstract

Washington State Route 155 is the major transportation route across the Colville Indian Reservation. The purpose of this research is to study traffic safety in terms of crashes and fatalities and their causes on the State Route 155. The report also included photos that compare and contrast the major differences of highway design and maintenance on the reservation and off the reservation. American Indian reservations as sovereign nations are not required to submit safety data, and only in the last decade has data been available on safety for reservation roads. That is being corrected with new safety initiatives to involve tribes in safety, including aggregation of new and updated traffic safety data from the Center for Disease Control (CDC), Fatality Analysis Reporting System (FARS), state traffic safety offices, and tribal crash data. Preliminary data collection and analysis of traffic safety data shows multiple data sources that do not seem to reflect actual crash data. Further exploration of traffic crash data and efforts to establish an accurate data base of crashes and fatalities, plus a safety assessment of State Highway 155, and possible Future safety audit, will demonstrate the value of detailed safety assessments and audits to create good data that can be used for tribal transportation safety planning.

Chapter One: Background

My name is Adam Amundson. I am an enrolled member of the Colville Confederated Tribe. I am currently at Eastern Washington University's Urban/Regional Planning Department. I am currently working on my Bachelors of Arts degree. The purpose of this research is to study traffic safety in terms of crashes and fatalities and their causes on State Route 155 and to include photos that document major differences in conditions for highways on the reservation and off the reservation. Research is an important part of transportation, it is my hopes that this research opens the publics eye's to the growing problem on "Indian" reservations today. More deaths happen on reservations due to vehicle accidents every year. Some get documented and some don't. It is also my hope that this problem gets noticed and possibly more doors for much needed funding of highway safety on the Colville Indian Reservation and other reservations that are in the same situation of safety concerns for their highways. One other problem that plagues the Colville Indian Reservation and probably all "Indian" reservations is accurate recording of crash data on "Indian" reservations.

Introduction to Tribal Transportation on the Colville Reservation

The Colville Confederated Tribes: Department of Transportation (CCT: DOT), is primarily funded through the Tribal Transportation Program (TTP), formerly the Indian Reservation Roads (IRR) Program, which is co-jointly administered by the Bureau of Indian Affairs (BIA) and the Federal Highway Administration (FHWA). U.S. Public Law 93-638, the Indian Self-Determination and Education Assistance Act (ISDEAA), passed in 1975, afforded Native American Tribes options for taking control of their own transportation needs through self-determination contracts with the BIA, State transportation programs, and other local agencies. The CCT: DOT operates under a series of Public Law 93-638 contracts and a Government to Government (G2G) agreement with the BIA.

Through these 638 contracts and agreements, the CCT: DOT maintains a road inventory in excess of 860 miles. The reservation has three other transportation jurisdictions within its boundaries: Ferry County, Okanogan County, and the Washington State Department of Transportation (WSDOT). Within these jurisdictions there is an additional 1,240 miles of roads that provide access to and within the Colville Indian Reservation, bringing the total mileage linkages to roughly 2,185. Given the amount of road miles that CCT: DOT oversees, the transportation system plays a critical role in the vitality of the tribal economy as well as the quality of life for members of the community. The transportation system not only provides the mobility of people, goods and services within the borders of the reservation, but also facilitates growth patterns of communities and fuels economic development. The performance of the system has an impact on a wide range of issues, such as access to cultural sites, environmental

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resource consumption, social equity, land use, population growth, economic development, and most importantly, safety.

Since 2010, a number of improvements have occurred, most importantly, in 2012 the CCT: DOT completed a comprehensive update of their Long Range Transportation Plan (LRTP). This development was significant as the tribe had not completed such an update LRTP since 1989. The LRTP provided short term and long terms strategies for transportation improvements and was based on a comprehensive analysis of relevant factors and issues affecting the current and projected transportation network in compliance with 25CFR 170.410-414. The LRTP identified several priorities with regard to transportation, these being the TTP Inventory, Road Maintenance, Transit, the Inchelium Ferry, Non-Motorized Transportation, Access Roads, Implementation, and the main priority, Safety.

Given the importance of safety, the idea has been to develop a safety plan when the Tribe developed the capacity to undertake such an endeavor. Once a Transportation Planner was brought on board in the summer of 2013, the Tribe implemented the Traffic Safety Planning process. This process followed the FHWA Rural Roads model, and involved similar steps

1. Establish Leadership
2. Collect and Analyze Data
3. Determine Emphasis Areas
4. Identify Strategies
5. Prioritize and Incorporate Strategies
6. Evaluate and update the Safety Plan (CCTDOT/Traffic Safety Plan/2015)

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This report includes a section of the Colville Confederated Tribes Department of Transportation Safety Plan 2015 to give an idea of all departments involved with traffic safety on the reservation. The Colville Confederated Tribe is in a government-to-government relationship with the Federal Highways Administration (FHWA) and The Bureau of Indian Affairs (BIA) for funding with grants to do maintenance of their roads and highways running through the Colville Indian Reservation. This government-to-government relation dates back to May 22, 1983 when the three parties entered into a memorandum of agreement to include planning for Indian reservation roads so an agency can receive money for their projects.

The Colville Confederated Tribes Reservation, like many other reservations located in the United States, is in a remote location and high traffic fatality rates. The roads and highways within the boundaries of the reservation are often in very poor condition compared to the State Highways before they enter the reservation. I was interested in learning more about safety along this route, and the systems for identifying and tracking crash data, as well as assessments of the roadways.

Methodology.

My research was started from my own knowledge of this dangerous road that goes through the center of the Colville Reservation, crossing a mountain pass and traversing a wide range of elevations and mountains. Working with faculty advisors Winchell, Hill, NW TTAP Director Rowena Yeahquo I completed basic research on tribal transportation safety and tribal transportation programs. I also contacted and regularly discussed tribal transportation safety

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with Mr. William Marchand, CCT Transportation Planner, and during Summer, 2015 I served as an intern in the CCT Tribal Transportation Program.

My next step was to identify sources of tribal traffic safety data, and I identified a number of data resources including a safety report from the tribe, WSDOT data the our EWU Tribal Planning Program was provided with GIS location of crashes provided by co-Eisenhower Fellow Jeremy Charley and Dr. Kerry Brooks, GIS faculty. I examined FARS data and CDC data, and identified 10 reported fatalities from 2010-2014 on this route, along with details of each crash.

Based on my own knowledge of the route, and observation of memorials, I completed a detailed inventory of memorials created by family and friends on the roadside to remember their family members who died on the roadways. I used googlemaps and streetview, along with the WS DOT roadway inventory (an on-line inventory of roadways with video and location feeds), and drove the road to identify both the 10 recognized crash sites and the six additional sites with fatal crashes that I identified. I followed-up with personal conversations with residents and those familiar with the six crashes to gain further information about each crash. Finally, through my experience in the field, I began to complete road safety assessment of the route, and also of other roads across the reservation, as well as comparing conditions of roads on the reservation with the conditions of the same roads just across the border off the reservation.

Crash Data Findings and Analysis

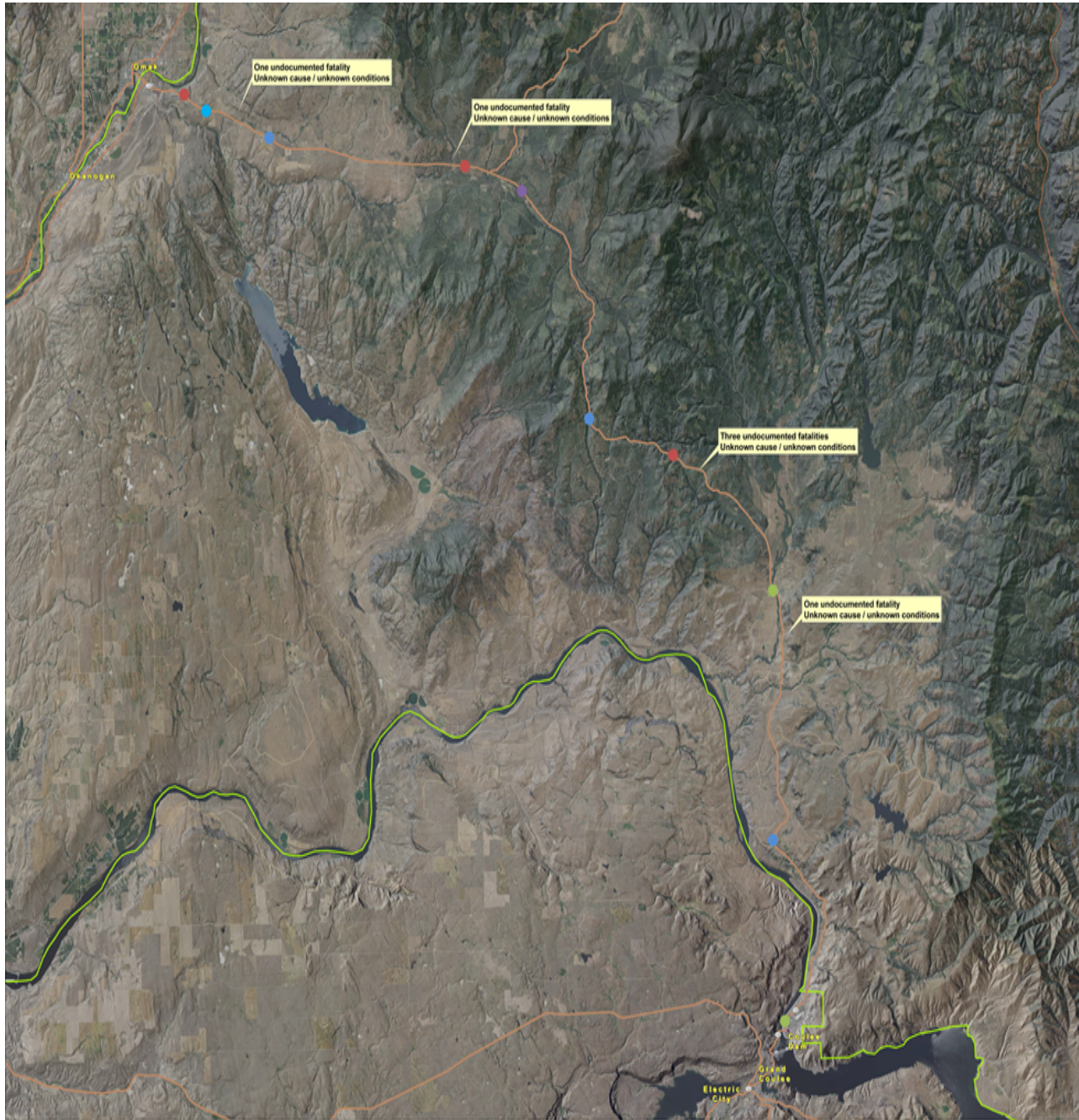
There were a total of ten documented fatalities in on SR 155 between 2010 and 2014 (see Map 1). Further research that I carried out revealed six more fatalities that were not documented

Traffic Safety Issues on State Highway 155 through the Colville Reservation

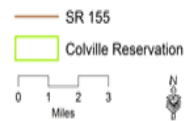
and I placed a note on my map to define these other undocumented fatalities on SR 155. All of the ten fatalities are related to a behavioral issues as contributing factors but poor conditions of road and side of roadways also may have contributed.

Traffic Safety Issues on State Highway 155 through the Colville Reservation

Map 1 Traffic Fatalities SR 155/2007-2012



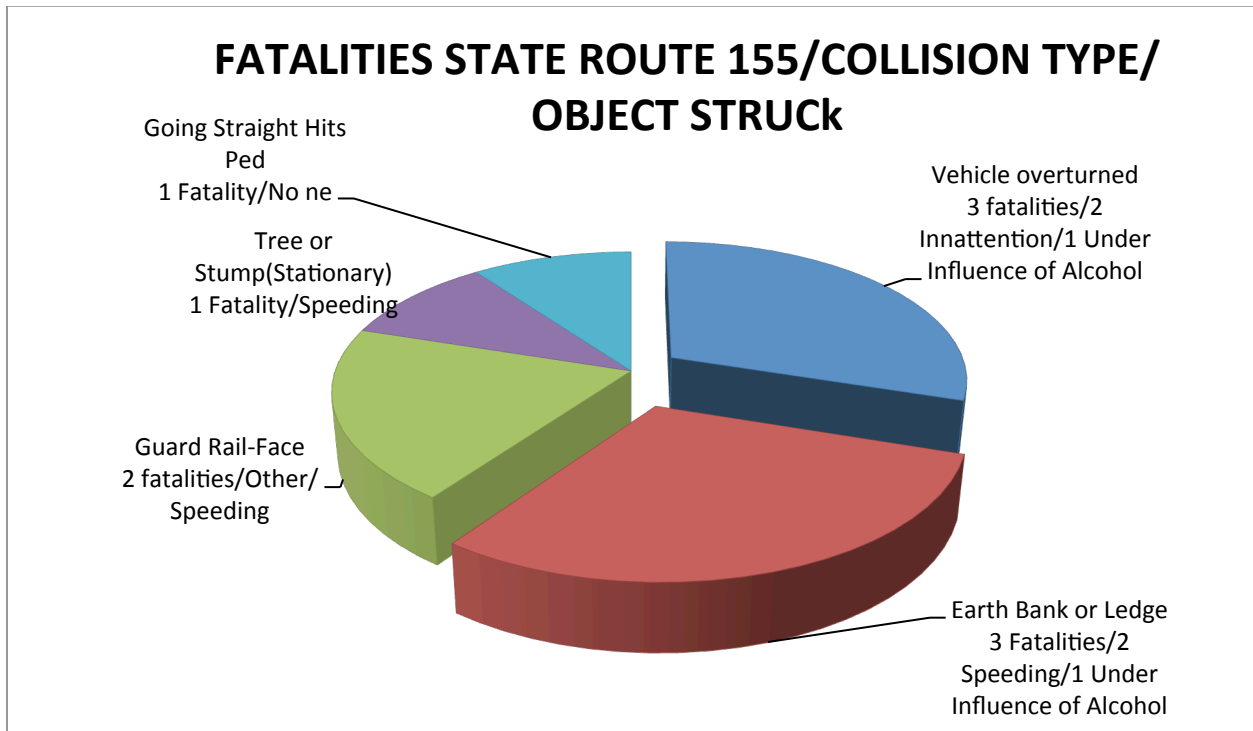
Traffic Fatalities:SR 155 on Colville Reservation



Source: WSDOT Data.

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Contributing factors along with collision type identified for the ten documented fatalities from Washington State Department of Transportation (WSDOT) include overturned vehicle and leaving the road surface, guard rail, stump and pedestrian collisions. **Chart 1 Color Codes of Fatalities on Map/Collision Type/Object Struck**



Source: Officer Collision Reports 2007-2012 (WSDOT)

In addition to this report, the tribe itself had records based on the WSDOT data-base that described fatal crashes on the reservation that occurred on Route 155. This data provided the starting point for my research (See Table 1).

Traffic Safety Issues on State Highway 155 through the Colville Reservation

Table 1 Washington State Department of Transportation 2013

OFFICER REPORTED COLLISIONS THAT OCCURRED ON COLVILLE TRIBAL RESERVATION
1/1/2007 - 5/31/2013 (May of 2013 is the most current complete month processed)



*UNDER 23 UNITED STATES CODE – SECTION 409, THIS DATA CANNOT BE USED IN DISCOVERY OR AS EVIDENCE
AT TRIAL IN ANY ACTION FOR DAMAGES AGAINST THE WSDOT, OR ANY JURISDICTIONS INVOLVED IN THE DATA*

COUNTY	JURISDICTION	CITY	COUNTY ROAD NAME	PRIMARY TRAFFICWAY	BLOCK NUMBER	INTERSECTING TRAFFICWAY	DIST FROM REF POINT	Mi or FT	COMP DIR FROM POINT	REFERENCE POINT NAME	MILE POST	A/B	*REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE
Okanogan	State Route				155						36.12		E184817	8/2/2012	11:40	Dead at Scene
Okanogan	State Route				155						44.78		3455902	6/18/2010	13:49	Died in Hospital
Okanogan	State Route				155						51.23		2836819	3/21/2009	6:15	Dead at Scene
Okanogan	State Route				155						55.1		2634528	6/15/2007	18:38	Dead at Scene
Okanogan	State Route				155						63.96		2659989	9/19/2010	10:50	Dead at Scene
Okanogan	State Route				155						66.4		3512773	11/4/2011	0:30	Dead at Scene
Okanogan	State Route				155						74.3		2836932	6/14/2009	11:12	Died in Hospital
Okanogan	State Route				155						76.96		E159178	3/8/2012	22:12	Dead at Scene
Okanogan	State Route				155						78		2727218	9/6/2009	16:05	Died in Hospital
Okanogan	State Route	Coulee Dam			155						28.73		E195619	9/8/2012	11:45	Dead at Scene

#	F	V	P	P	VEHICLE 1 TYPE	VEHICLE 2 TYPE	JUNCTION RELATIONSHIP	ROADWAY SURFACE CONDITIONS	LIGHTING CONDITIONS	FIRST COLLISION TYPE / OBJECT STRUCK
J	A	E	E	E						
T	H	D	D	D						
4	1	1			Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Dry	Daylight	Vehicle overturned
0	1	1			Motorcycle		Not at Intersection and Not Related	Dry	Daylight	Guardrail - Face
0	1	1			Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Ice	Dark-No Street Lights	Earth Bank or Ledge
1	1	1			Passenger Car		Not at Intersection and Not Related	Dry	Daylight	Vehicle overturned
1	1	1			Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Dry	Daylight	Tree or Stump (stationary)
3	1	1			Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Ice	Dark-No Street Lights	Earth Bank or Ledge
0	1	1			Passenger Car		Not at Intersection and Not Related	Dry	Daylight	Vehicle overturned
0	1	1	1		Pickup,Panel Truck or Vanette under 10,000 lb		Not at Intersection and Not Related	Dry	Dark-No Street Lights	Vehicle going straight hits pedestrian
0	1	1			Truck (Flatbad, Van, etc)		Not at Intersection and Not Related	Wet	Daylight	Earth Bank or Ledge
0	1	1			Motorcycle		At Intersection and Not Related	Dry	Daylight	Guardrail - Face

MV DRIVER CONT CIRC 1 (UNIT 1)	MV DRIVER CONT CIRC 1 (UNIT 2)	VEH 1 COMP DIR FROM	VEH 1 COMP DIR TO	VEH 2 COMP DIR FROM	VEH 2 COMP DIR TO	IMPACT LOCATION (Effective for City, County & Misc 1/1/2010; SR's indefinite)
Inattention		North	South			Right Shoulder Decreasing Milepost
Other		North	South			Right Shoulder Decreasing Milepost
Exceeding Reas. Safe Speed		Northwest	Southeast			Past Right Shoulder Increasing Milepost
Inattention		Northwest	Southeast			Past Right Shoulder Increasing Milepost
Exceeding Stated Speed Limit		West	East			Past Right Shoulder Increasing Milepost
Under Influence of Alcohol		West	East			Past Right Shoulder Increasing Milepost
Under Influence of Alcohol		East	West			Past Right Shoulder Increasing Milepost
None		West	East			Lane 1 Decreasing Milepost
Exceeding Reas. Safe Speed		East	West			Past Right Shoulder Decreasing Milepost
Exceeding Reas. Safe Speed		Northeast	Southwest			Right Shoulder Decreasing Milepost

Source: Colville Confederated Tribes Department of Transportation/WSDOT/2013

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Additionally, the Center for Disease Control (CDC) also has provided data now available at the County level, and I was able to include that data as indicative of the rural roads in this region (see Table 2).

Table 2: Total fatalities in Okanogan County, (NHTSC) 2007/2012

NHTSC NATIONAL HIGHWAY TRAFFIC SAFETY COMMISSION 2007/2012			
	Fatalities	Prior year Fatalities	
County	2007	2006	Percent Change
OKANOGAN (47)	11	9	22
	2008	2007	
OKANOGAN (47)	9	11	-18
	2009	2008	
OKANOGAN (47)	8	9	-11
	2010	2009	
OKANOGAN (47)	11	8	38
	2011	2010	
OKANOGAN (47)	10	11	-9
	2012	2011	
OKANOGAN (47)	14	10	40
County Total	63	58	
Colville Reservation			
Total	27		

Source: <http://www-fars.nhtsa.dot.gov/States/StatesCrashesAndAllVictims.aspx>

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Because of my personal knowledge of crashes from living on the reservation, and identification of memorials along the roadside, I recognized that additional fatalities had occurred. When a person lives in a small community and someone dies you hear about it and the whole community feels the tragedy. I completed follow up discussions with local residents to gain basic information on those additional crashes and fatalities, and confirmed that there were six additional fatal crash sites during this time period that were not reported into the FARS system. As tribal transportation safety planning expands and is recognized as a very important service to tribes, it is hoped that tribes will identify and collect data, and report critical crash information for fatal and serious injury crashes as appropriate into state and federal data systems. Within Washington the Washington Traffic Safety Commission will work with tribes to receive appropriate data from tribes that respects tribal sovereignty, but also identifies and can be used to address transportation safety issues.

The Colville Confederated Tribe only has access to limited data resources for studying fatalities and crashes on the reservation and that is Officer Reported reports from the State Patrol and BIA monthly reports so I based most of my report on these resources. I was able to find a Fatality Analysis Reporting System (FARS) table that shows total fatalities in Okanogan County.

Data: My research involved a study of Traffic Safety Issues of State Route 155, located on the Colville Indian Reservation (CCT). I also included fatalities that have happened on SR 155 and I worked with William Marchand, Transportation Planner with Colville Confederated Tribes

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Department of Transportation (CCTDOT) who provided me with valuable insights to obtain CCT Tribal crash data.

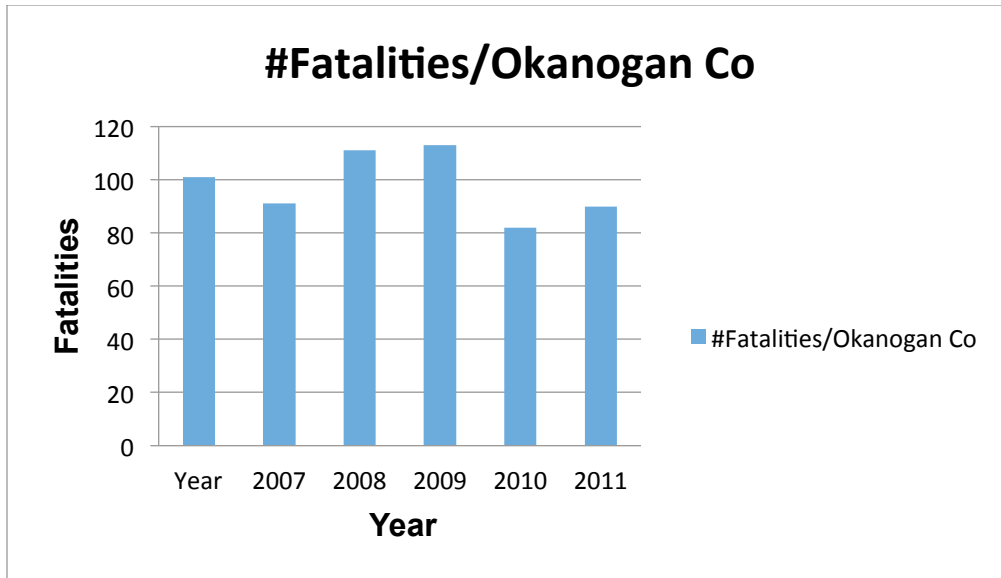
The data from “Officer Reported Collisions from the State Patrol 2007-2012.” Second set of data studied a “BIA monthly reports,” cover of 2009-2012 and is also in the “Tribes Safety Plan.”

There were 10 fatalities on SR 155.

The National Highway Traffic Safety Administration (NHTSA) found that over 56% of traffic deaths in the United States occur on rural roads, yet only 23% of the US population live in rural areas. On rural roads the highway design is not engineered for high speeds, yet due to less traffic people tend to drive faster on such roads.

Okanogan County Fatalities 2006-2011: The chart below is fatalities in Okanogan County, 2006-2011 and in 2009 shows one hundred and sixteen fatalities from car accidents compared to the SR 155 in same year 2009 on the Colville Indian Reservation where there were two fatalities. 2010 on chart shows the fewest fatalities numbering 81. State Route 155 in 2011 there was only one fatality almost reaching “Target Zero’s” goal of zero Fatalities by 2030.

Traffic Safety Issues on State Highway 155 through the Colville Reservation



Source: Colville Tribes: Traffic Safety Plan 2015

There ten documented fatalities on State Route 155 during a six year period, 1/1/2007-5/31/2013 according to crash data. There is another set of data that is not available and is recorded by the Colville Tribal Police. It is not shared with any other agencies.

Traffic Safety Issues on State Highway 155 through the Colville Reservation

People who choose to speed often do so without understanding the full implications of their behavior. According to the National Highway Traffic Safety Administration (NHTSA), the consequences of excessive speed include the following:

- Greater potential for loss of vehicle control, which may result in a crash.
- Reduced effectiveness of occupant protection equipment.
- Increased stopping distance after the driver perceives a danger.
- Increased degree of crash severity leading to more fatalities and disabling injuries.
- Unexpected economic and even psychological implications of a speed-related crash.
- Increased fuel consumption and cost.

The most serious consequences of speeding are the fatalities and serious injuries, and speeding has been identified as a contributing factor in nearly 33% of all roadway fatalities nationwide. Crashes involving speeding occur on all road types but are particularly prevalent on the local rural road system. Of the 30,196 fatal crashes occurring on all road types in 2010, 35.4 percent—or 10,689—occurred on local rural roads, with nearly one-third (3,427) of these involving speeding. As the speed increases, the likelihood of a crash resulting in a serious injury or fatality also increases.

Identify and promote effective speed enforcement activities. As previously mentioned, the Tribe has been a participant in WTSC's Target Zero plan on a state level, however the scope of work for the Colville Tribe's was mainly limited to seat belts and impaired driving. Implementing a public

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awareness campaign on speeding and speed enforcement would be beneficial, as there are existing efforts toward speed enforcement; however it is clear that the perception of motorists is that there is not speed enforcement taking place.

Traffic Safety Issues on State Highway 155 through the Colville Reservation

Photo 1 Speeding Vehicle and Passing Illegally



Source: SAMSUNG Galaxy S-5 Photos By, Adam Amundson "Eisenhower Fellowship" /CCTDOT 2015

This is a prime example of speeding on the reservation and also doing it illegally because there are some impatient drivers on SR 155. This vehicle blew by me at 80 mph and was on my tail-gate until it had a clear enough opportunity to pass.

Photo 1 Speeding Vehicle and Passing Illegally



Source: SAMSUNG Galaxy S-5 Photos By, Adam Amundson "Eisenhower Fellowship" /CCTDOT 2015 (There and gone! 80+mph)

Traffic Safety Issues on State Highway 155 through the Colville Reservation

The National Highway Traffic Safety Administration (NHTSA) explains that over 56% of traffic deaths in the United States occur on rural roads, yet only 23% of the US population actually lives in rural areas. On rural roads the highway design is not engineered for high speeds, yet due to less traffic people tend to drive faster on such roads. State Route 155 is one of these roads that it is not designed for 60 mph. A moremost comfortable and safe driving speed was 50 mph, so the vehicle did not lean uncontrollably and felt firmly placed on roadway at this speed. At 60 mph vehicle felt unstable going around corners because the route is located in a very mountainous region and road is very windy as well with almost no edges from fog line on this State Route.

Contributing factor 2: Under the influence of alcohol The reservation that will need to be addressed in the future. Impaired driving is more common sine there are no public transit alternatives on rural roads, either one drives somewhere, walks, or they stay where they are.

DUI Infractions 2010-2012

2010	2011	2012
96	59	55

The amount of DUI infractions have dropped by nearly 50% between the years 2010-2012, which aligns with the overall drop in crashes on the reservation during the same period of time

Crashes on the Colville Indian Reservation 2009-2012

2009	2010	2011	2012
262	246	129	148

The chart above shows the lowest amount of DUI infractions in 2011 and starts to increase again in 2012. Only one fatality in 2011 had an alcohol as a contributing factor.

Contribution factor 3: Inattention Inattention associated with talking on cell phones, texting and driving, eating or drinking. I can relate an article from the Times Daily.com by Tom Smith, (Senior Editor) He writes about inattention in other States called: "Pay Attention, officials said driver error related to most accidents, fatalities." The article highlights traffic moves at a faster

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pace and people on the highways drive so fast they need to watch in front of you, beside you, and behind you, because you don't know what the other driver is going to do at any given minute?

Speed, distractions and inattentiveness are all contributing factors of most accidents, according to law enforcement officials. There have been 17 traffic fatalities in the northwest Alabama region and the southern Tennessee counties of Wayne and Lawrence. Of those, 10 occurred in May.

Since 2007, there have only been three other months that had more traffic fatalities than May 2015. There were 11 fatalities in October 2012 and 10 in June 2011 and July 2008.

"One of the first things we'll do in each class is to watch video on wrecks caused by speed," Trimble said. "They can be very eye-opening, and that's what I want for the students. I want them to understand driving is serious business, not fun and games." Trimble said the biggest problem with single car accidents is distracted driving and speed.

"You preach that to them, and they seem to get it. But once they leave the class all you can do is hope and pray they got the message," he said. Russell said with gas prices cheaper than in year's past, more people are on the highways "and more people are not paying attention to what they're supposed to be doing — driving."

"If everyone drove the speed limit and obeyed the laws, there wouldn't be a problem," Henry said. "But I am constantly watching for other people. I drive defensively, because there are people on the road who don't know the meaning of defensive, they're always driving aggressively." Russell said people have to realize driving "needs to be taken seriously."

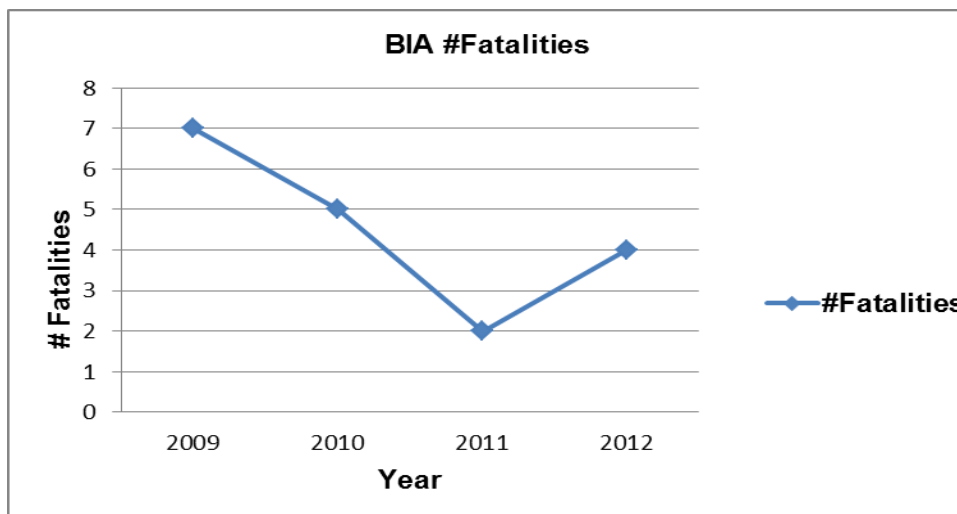
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“Drivers need to realize when they get behind the wheel of a car they have a job to do — get themselves and their passengers from point A to point B, in the safest manner they can,” Russell said. “Which means, putting down the cellphone, obeying stop signs, not running traffic lights, in general paying attention to what they are doing.

“If people would do that, the number of wrecks and the number of fatalities would go way down.” I had included quotes from this article in my report because it touches on inattention of drivers behind the wheel (Smith, T)

In-Attention

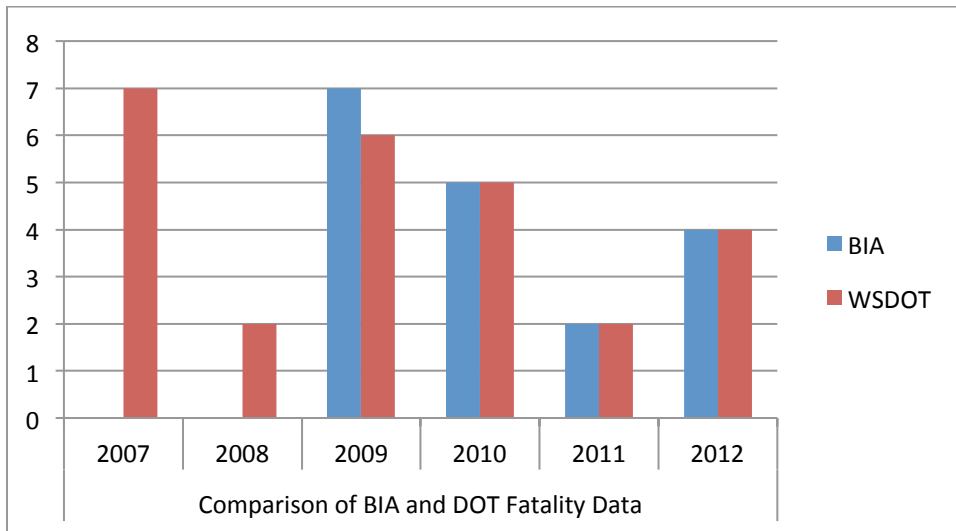
Two In-Attention fatalities occurred on SR 155 on the Colville Indian Reservation from 2007-2013, and data from WSDOT Officer Reports also identified twenty-four crashes related to “In-Attention” and thirty-six vehicles involved in crashes. Data shows that “In-Attention” accidents account for “fifteen No-Injury.”



Source: BIA Indian Highway Safety Program Monthly Reports 2009-2012

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BIA monthly reports in chart below in blue shows 7 fatalities and WSDOT data in red show 6 fatalities.

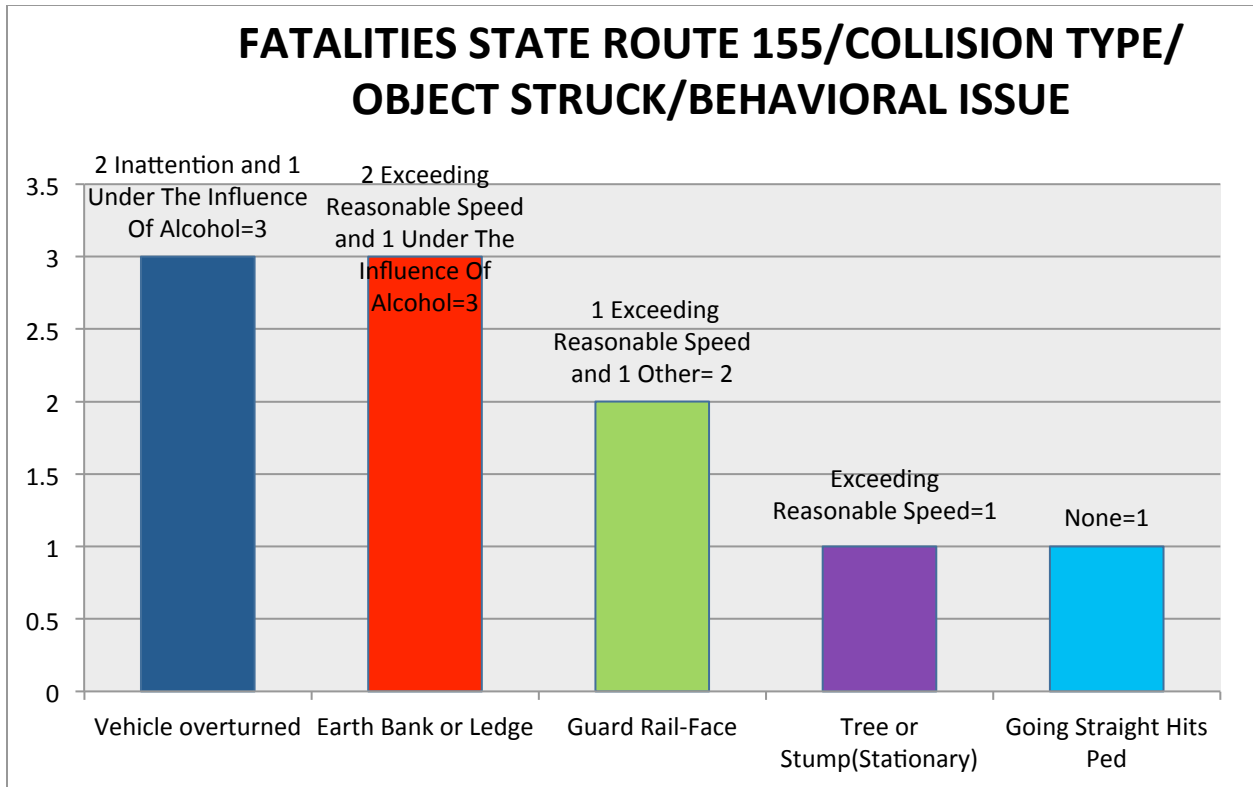


Source: BIA Indian Highway Safety Program Monthly Reports 2009-2012, WSDOT 2007-2012

Although it is slight, it is a major concern and is an example of inaccuracy in recorded data and a better system for recording more accurate data needs to be in place and available to the (CCTDOT).

BIA Indian Highway Safety Program Data

The Tribal PD Records Clerk Sonya Whalawhitsa, supplied CCT: DOT with BIA Indian Highway Safety Data for the years 2009-2012, which yielded some of very interesting trends on Colville tribal traffic safety.



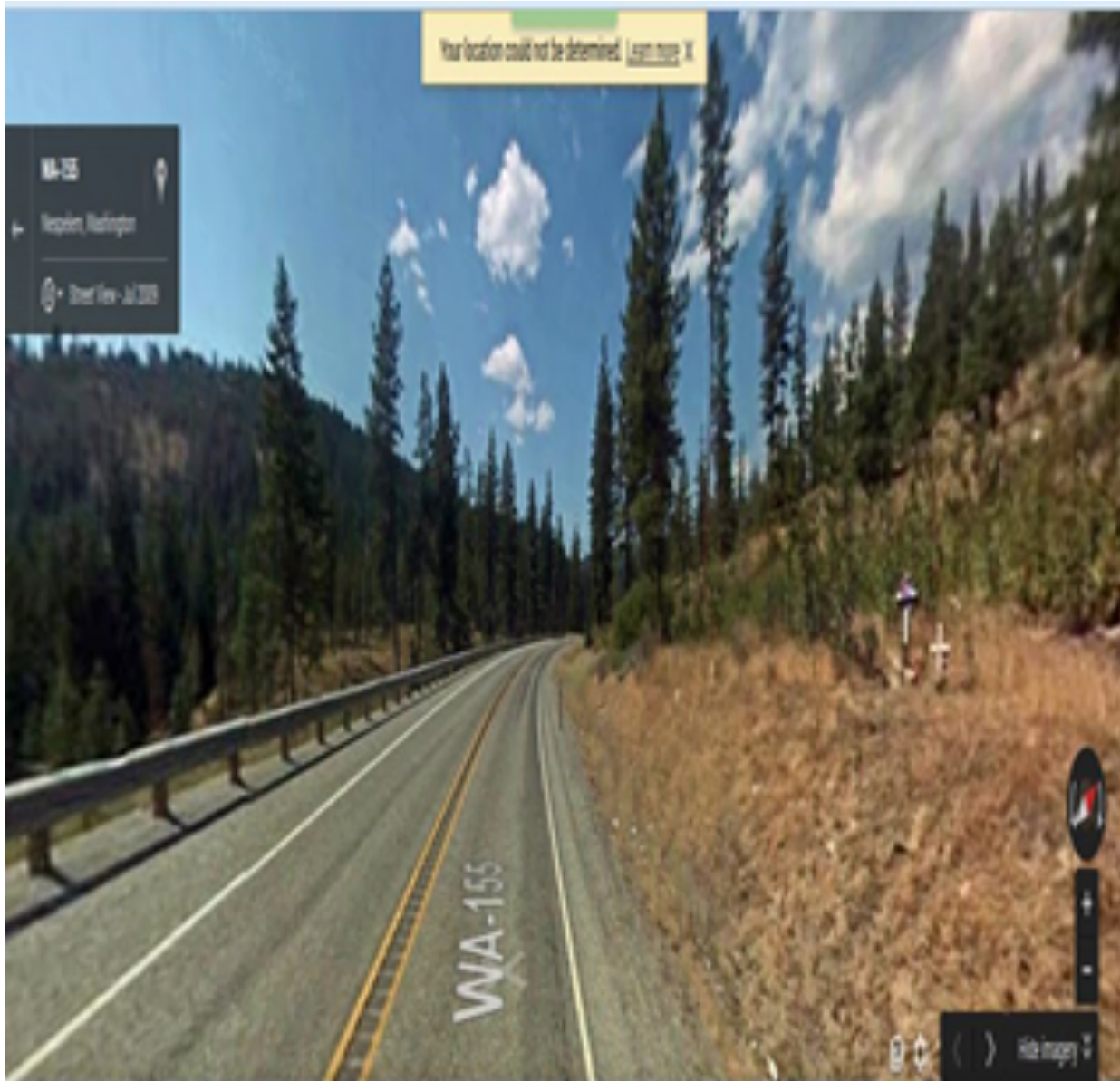
Automobile fatalities on the Colville Indian Reservation 2009-2012

Other data examined:

SR 155 is lined with memorials of fatalities that have occurred on this highway as are most reservations in the United States. “Native Americans” have a 3.9 times higher chance of dying in a motor vehicle accident Nation-wide compared to other races. This does not recognize that fatal crashes on reservations are not fully reported, and there are many that do not because tribes as sovereign nations do not have to share data of crashes if they wish not to.

Traffic Safety Issues on State Highway 155 through the Colville Reservation

Photo 1: Two Undocumented Fatalities



Source: [Google Earth.com/2009](https://www.google.com/earth/)

First 2 memorial crosses at mile post 50-52, SR 155. I did not find any official record of these fatalities on state or CDC data I was researching to do my study

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Issues of Differences in Road Conditions on reservation and off reservation.

My report also includes photos to compare and contrast the difference in the condition of our highways compared to the State Highways that border our reservation. Maybe if our State Highways were in the same shape as the State Highways surrounding the reservation some of the ten documented and six undocumented fatalities may have never happened and could have been prevented.

Funding for the maintenance and safety of reservation roads and highways is limited because of the complicated history of reservation road maintenance based not in transportation, but coming from BIA general revenues.

The Relative Needs Formula (RNF) can be used to identify the Cost to improve roadways, defined as the cost to improve a road from existing condition to an adequate standard.

Adequate maintenance funding extends the life of roadways, and is essential where there are limited funds for road improvement projects. As a result, during the last four years tribal governments have been able to use up to one half of their total TTP shares for road maintenance to preserve existing roadways while making them more safe.

The Colville Confederated Tribe is fortunate to have almost 10,000 members. The tribe is allocated \$4,049,766.00 (FY 2014 IHBG Estimate Allocation) in its appropriation for TTP funds.

In the next section I will compare photos of roads on the reservation, and the same roads off the reservation, indicating the maintenance funding differences and the impact on safety.

Photo 2: State Route 155 Before It Enters the Colville Indian Reservation 2015



Source: Photography by Adam Amundson “Eisenhower Fellowship” 2015

Traffic Safety Issues on State Highway 155 through the Colville Reservation

Here is State Route 155 before it enters the Colville Indian Reservation. It is plain to see the difference compared to the photo above. A question of concern is why? In this photo taken near Grand Coulee, Dam you can see it is very pedestrian friendly with sidewalks, well visible fog lines, and center lane stripping. Surface of asphalt is very smooth as well.

Photo 3: SR 155 Starting on Colville Indian Reservation/No Sidewalks 2015



Traffic Safety Issues on State Highway 155 through the Colville Reservation

Source: Photo by, Adam Amundson “Eisenhower Fellowship” 2015

Well by the looks of this photo it is apparent that after SR 155 enters the Colville Indian Reservation it is no longer a pedestrian friendly route. No sidewalks on either side of roadway.

Photo 4: Condition of SR 155 on the Colville Indian Reservation 2015



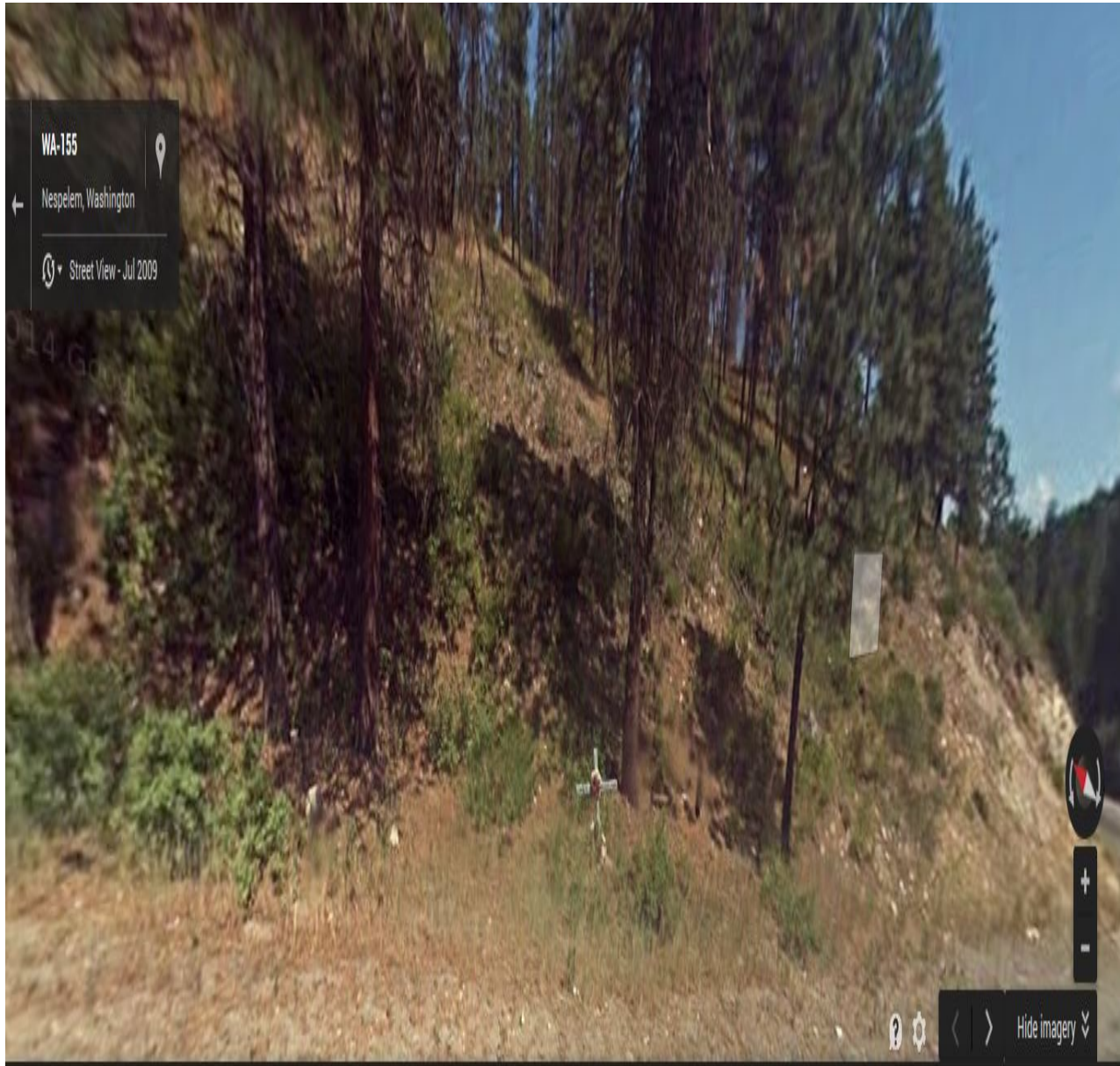
Source: Photo by Adam Amundson “Eisenhower Fellowship” 2015

Traffic Safety Issues on State Highway 155 through the Colville Reservation

Example of faded fog line and center line strips on SR 155, it routes through the Colville Indian Reservation 2015. It is plain to see the difference of before entering the reservation and after.

The condition of our roadways is a factor as well in fatalities on the reservation does this look safe? You can see the un-even asphalt making this road un-safe for travel.

Photo 5: Undocumented Fatalities



Source: Google Earth.com/2009

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Unknown mile post of this undocumented fatality but it was just around the corner from my first photo. My study is just to make a point that SR 155 going through the Colville Indian Reservation is not as safe as it could be, and needs Road Safety Audits to create safety plans.

Photo 6: State Route 97 north surrounding the Colville Indian Reservation 2015



Source: Photo by, Adam Amundson “Eisenhower Fellowship” 2015

Traffic Safety Issues on State Highway 155 through the Colville Reservation

One can only dream that State Route 155 going through the Colville Indian Reservation could ever look in this good of shape. This is State Route 97 running north from the town of Omak WA, going to Tonasket WA, and is one of the State Routes that runs through the edge of the Colville Indian Reservation. Maybe if SR 155 was in this good of condition the fatality above could have been prevented? It is Important to remember though behavioral issues as well.

Photo 7: Conditions of SR 155 running through the Colville Indian Reservation 2015



Source: Photo by, Adam Amundson "Eisenhower Fellowship" 2015

Traffic Safety Issues on State Highway 155 through the Colville Reservation

This Photo shows the condition of State Route 155 and it is apparent by looking at this picture you can see the disparity in the condition of State Highways running through the reservation.

This is an emergency pull-off that appears very dangerous. Leaving asphalt to soil could be very dangerous and no guardrails to protect his vehicle from the trees.

Photo 8: Emergency Pull-Off on State Route 97 North to Tonasket Washington 2015



Source: Photo by, Adam Amundson "Eisenhower Fellowship" 2015

Traffic Safety Issues on State Highway 155 through the Colville Reservation

This photo shows a disparity between the two State Routes. This photo is a prime example of what an emergency pull-off should look like with paved surface and guard rails for added protection if a vehicle was in a crash situation.

Photo 9: One Undocumented Fatality SR 155



Source google earth.com/2009

Traffic Safety Issues on State Highway 155 through the Colville Reservation

Mile post unknown host an undocumented fatality indicated by a memorial cross and flowery wreath located at bottom of sign on SR 155. Cause of this fatality is unknown? Not known if behavioral issue was part of accident? This section of SR 155 is in fairly good condition. You can see the center-line and fog line in this photo compared to other sections of SR 155. In photo on next page I will demonstrate the faded fog line and faded centerline.

Photo 10: SR 155 going thru Colville Indian Reservation 2015/Faded Fog line/Centerline



Source: Photos by, Adam Amundson "Eisenhower Fellowship" 2015

Another example of faded fog line and centerline stripes on State Route 155 travelling thru the Colville Indian Reservation 2015. If you look closer you can also see there is no existence of

Traffic Safety Issues on State Highway 155 through the Colville Reservation

paved curb from fog line like you see on State Routes surrounding the reservation and can see the un-even pavement from patchwork jobs done on SR 155.

I have lived here most of my life and all I witness is patch work with “Chip Seal” work on SR 155 done by State of Washington roads departments who are the ones in charge of the maintenance and safety issues of SR 155.

Photo 11: State Route 97 Heading North to Tonasket Washington 2015



Source: Photos by, Adam Amundson “Eisenhower Fellowship” 2015

Traffic Safety Issues on State Highway 155 through the Colville Reservation

Here is a photo of a beautiful example of what a State Highway in Washington State should look like. You can see the ten feet of asphalt from the fog line to the ditch as is required on State Routes within Washington State. The next photo is what we have for a curb on State Route 155.

Photo 12: State Route 155 on Colville Indian Reservation, No Curbs/Guard Rails/Chevrons 2015



Source: Photo by, Adam Amundson "Eisenhower Fellowship" 2015

In this photo there is a huge difference in road side curbs compared to the State Routes surrounding the Colville Indian Reservation 2015. The bottom part of photo the only reason curb is wider is because photo was taken on a dirt road entrance to the highway. Two more simple low cost improvements could be guard rails/chevrons on curves.

Photo 13: State Route 155/Vehicle Parts Littering Sides of Road 2015



Source: Photo by, Adam Amundson "Eisenhower Fellowship" 2015

This photo is from an accident that happened on SR 155 in this section of highway there is no guard rails and if there were this accident may have never been so extreme. Next photo shows a section of highway that could use guard rails.

Photo 14: State Route 155 Lack of Guard Rails 2015



Source: Photo by, Adam Amundson “Eisenhower Fellowship” 2015

This photo is where curve is that needs guard rails and is also place where car parts are in bottom of ditch from other vehicles going over this long steep embankment. If guard rails were in place for safety accidents may have been prevented here.

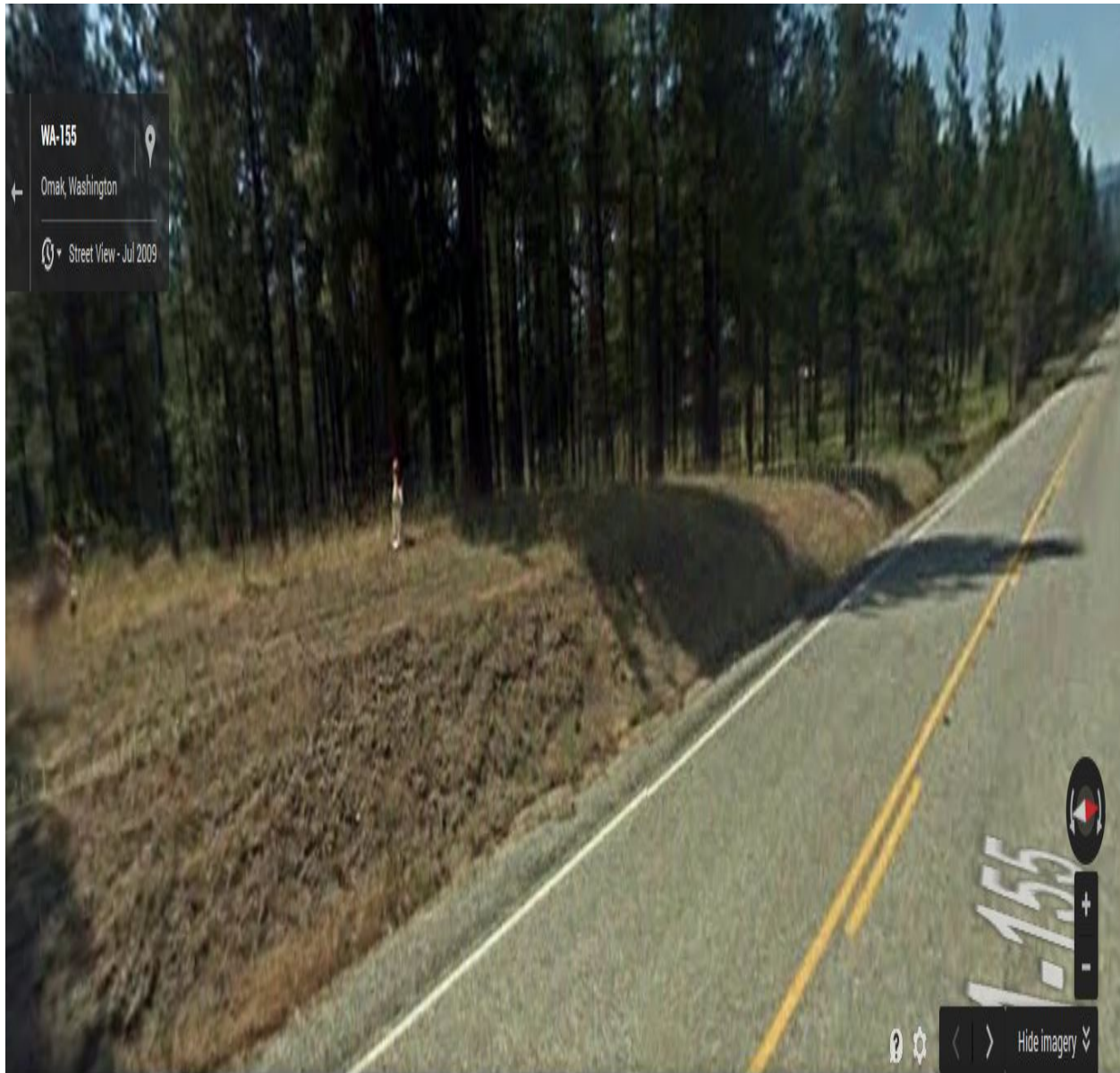
Traffic Safety Issues on State Highway 155 through the Colville Reservation

Photo 15: State Route 155 Lack of Guard Rails 2015



Source: Photo by, Adam Amundson "Eisenhower Fellowship" 2015

Photo 16: One Undocumented Fatality SR 155



Source google earth.com/2009

Undocumented Fatality mile post 67.1 SR 155 appears to indicate no shoulder and the earth/bank/ledge played a part in this fatality and there is not adequate curb from fog line. The plus here is that you can see the fog line and centerline stripe

Photo 17: SR 155 Patch work 2015

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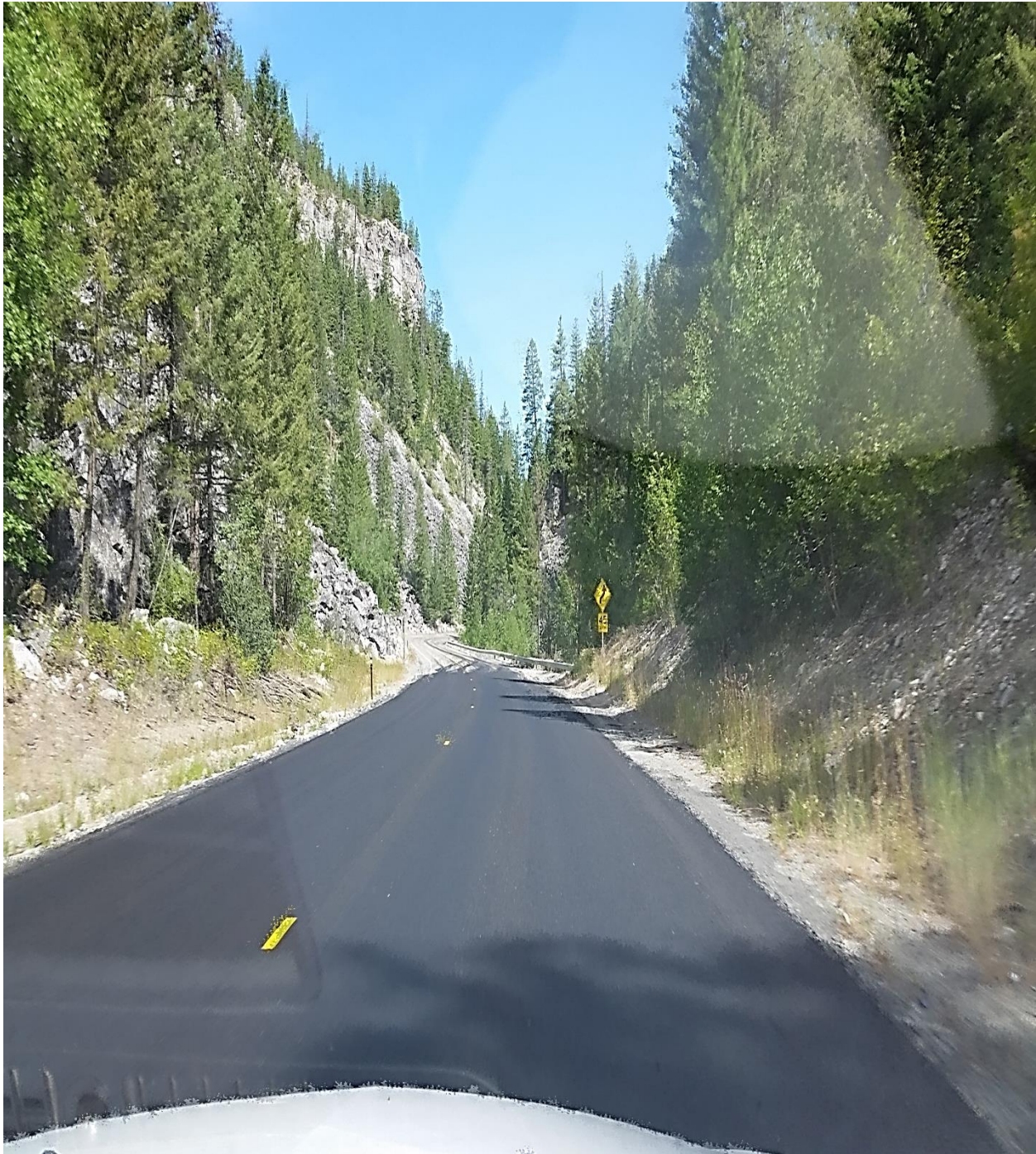


Source: Photo by, Adam Amundson “Eisenhower Fellowship” 2015

This photo is an example of maintenance done on SR 155 and next photos will show more of the maintenance that is done to SR 155. Maintenance only appears to be in small patch work projects.

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Photo 18: SR 155 Asphalt Overlay Patch work 2015



Source: Photo by, Adam Amundson “Eisenhower Fellowship” 2015

Maintenance on SR 155 and is a small improvement that is greatly appreciated.

Photo 19: Last Undocumented Fatality SR 155



Source: Google Earth.com/2009

St Mary's Mission Turn off road Logging Truck fatality. This fatality occurred during 2007-2014 six year time period and was not documented by State Patrol or County Officials. Accident may have been documented by the Colville Confederated Tribes police force or EMS services.

American Indian reservations as sovereign nations are not required to submit safety data, and only in the last decade has data been available on safety for reservation roads.

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The Washington State Highway Safety Annual Report 2012 states on page 81 the Commission provided an update of integrated traffic safety efforts by Washington and Tribal governments. The update included data on the Washington traffic fatality rate (per 100,000 population) by race/ethnicity from 2006–10. The data shows that Native Americans are dying at a rate three times higher than other ethnic groups. Center for Disease Control (CDC), estimates 3.7 times higher than other races and these numbers would be higher if all crash data were recorded.

It is clear that reservation tribal traffic safety also needs to move to address road safety through expanded priorities for Road Safety Audits to identify potential road safety issues and address through transportation safety projects.

Photo 19: SR 155 Limiting Factors No Safe Pull-Off On Highway 2015



Source: Photo by, Adam Amundson “Eisenhower Fellowship” 2015

As I tried to document road conditions with photos, one of the biggest limiting factors in my research was being able to find safe parking while taking photos. I have worked with the Colville Confederated Tribe to finish conducting more research through road assessments and a

Traffic Safety Issues on State Highway 155 through the Colville Reservation

possible “Road Safety Audit.” The NW TTAP is working with the six demonstration tribes in the follow-up to EWU’s WTSC safety grant to provide workshops on RSA so tribal staff can organize and lead RSA’s on reservations that can lead to specific safety actions, strategies and projects.

Today on the Colville Indian Reservation there is over 2,185 miles of roads within its boundaries. In the report 2014-2018, Tribal Transportation Program (TTP) Inventory for the Colville Reservation. Of those miles, approximately 772 miles are paved, 527 miles are gravel, 885 miles are primitive roads or trails and 0.1 mile is proposed. The BIA database also indicates that approximately 38 percent of the total mileage is BIA-owned routes, 12 percent are State highways and 50 percent are owned by either Ferry or Okanogan County. The 51 miles of State Route 155 in my study is part of the 12 percent of state highways listed previously and WSDOT data records ten fatalities on it.

The vision of the Colville Confederated Tribes Department of Transportation is to have the most efficient, safe, and reliable tribal transportation system within the Northwest Region and a mission to provide safe, efficient, and reliable transportation and public road access to and within the Colville Indian Reservation and local communities for tribal members, visitors, recreationalists, resource users and others while contributing to community and economic development, self-determination, and tribal member employment.

These visions and missions are great the funding the Colville Confederated Tribe received back in the 1970’s is gone! This in turn makes it so hard for the Colville Confederated Tribe to fund any maintenance and care for their roads and highways. Today funding is decided by Congress from appropriations and is in a trickling system.

According to Colville Confederated Tribes Safety Plan written by CCTDOT, “traffic safety on the reservation, one of the highest priorities would be to improve data collection and data analysis. Presently, the only avenue in which the CCT: DOT has to explore with regard to traffic data are BIA Highway Safety Monthly Reports and WSDOT Collision Data collected by the State Patrol, and while these reports yield some useful data, there is very clearly room for improvement.”

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1.2 Problem and significance



Findings and next steps.

This is an on-going project, and the author hopes to joint the CCT Transportation Planning Office to continue work to identify additional crash data sources to achieve a comprehensive and systematic assessment of safety across all reservation roads. The second phase of this research will focus on road safety design and potential areas of safety improvement, as well as more complete analysis of conditions and causes of fatalities.