INTRODUCTION

The 2011 Navajo Nation Motor Vehicle Crashes Report is part of the Navajo Division of Tribal Transportation Planning Program's P.L. 93-638 Contract No. CTN00T780C6 Statement of Work requirements, Sub-section 2b. Accident Reports.

The report consists of 2011 accident data organized by agency in this order: New Lands, Northern, Western, Eastern, Chinle, Fort Defiance, and Navajo Indian Irrigation Program (NIIP). Within each agency the data is organized by route ownership (1=BIA; 2=Tribal; 3=State; 5=County; 7=Other Federal Program; and 8=Other Public Roads) and by route number and milepost.

Accident locations were located/identified and mapped by route number and mile marker/milepost using location description in the police reports and aerial photos. Each location is identified by route number and milepost or mile marker on the road as referred by a police officer to on his or her report. For other roads that have no mile markers, we calculated route mileposts according to the road inventory milepost calibration.

1. Data Collection and Mapping Process

The traffic accident data are manually collected from the police reports from Shiprock, Tuba City, Kayenta, Crownpoint, Chinle, Window Rock and Dilkon Police Districts.

The data are then input into an MSExcel spreadsheet by agency. To map accidents for each route, all accidents (with mileposts identified) for each route are selected and saved into an individual Event Table file by route, i.e., n9010.xls.

In ArcMap, open ArcTool, a route shape file can be created for each route using Calibrate Routes tool, Linear Referencing Tools, i.e., n9010_Calibrates.shp. The result calibrated route will have direction and mileposts calibrated.

In ArcTool, using Make Route Event Layer tool (also under Linear Referencing Tools), enter the calibrated route shape file (n9010_Calibrates.shp) and the route's Event Table file/Excel file (n9010.xls). A route event shape file for that route is thus created showing accident locations on that route identified by milepost. Export this file again, a route accident shape file (n9010.shp) will be permanently created.

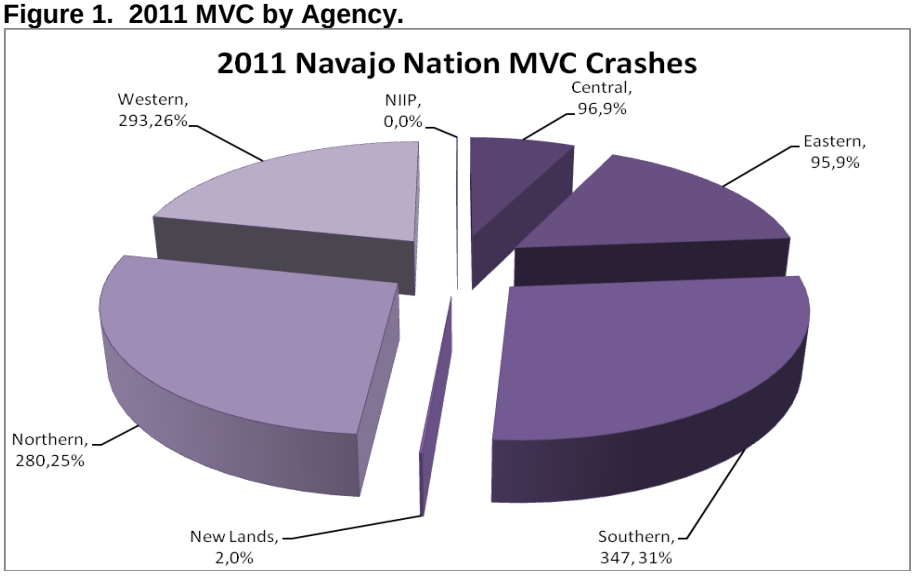
To combine all accident points for an agency, simple copy all accident shape files (n9010.shp, us491.shp, c7950.shp) into one layer: 2011_FTD.shp.

2. Statistical Summary

In 2011, a total of 1344 traffic accidents or motor vehicle crashes (MVC) occurred on public roads within the Navajo Nation.

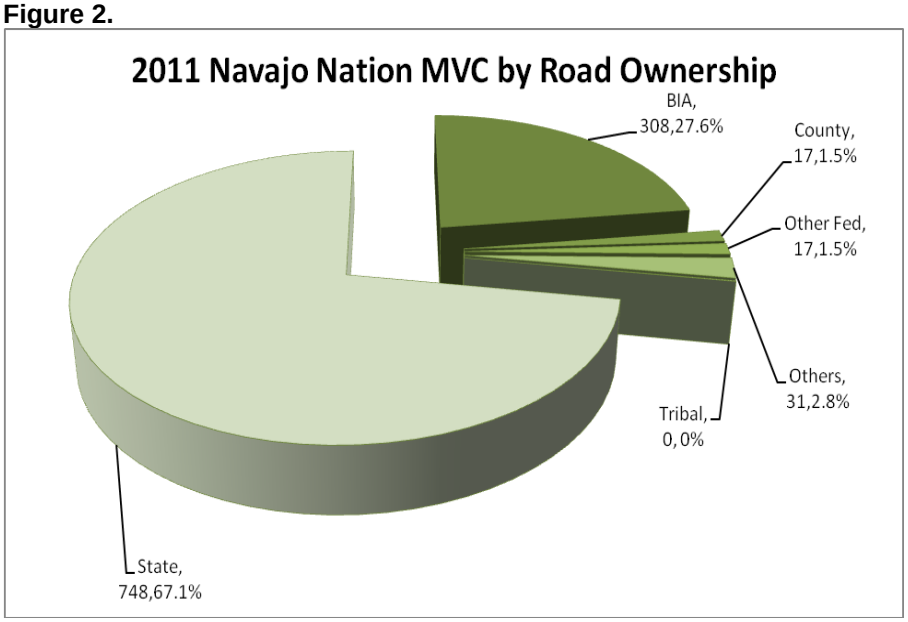
2.1 Agencies with High Crashes: Figure 1 below depicts distribution of the 2011 MVC by agency. Southern Navajo Agency has the highest MVC of 347 or 31%; second by Western Navajo Agency, 293 or 26%; and third by Northern Agency, 280 or 25% in 2011.

Figure 1. 2011 MVC by Agency.



2.2 Routes by Ownership: In 2011, State Highways had the highest MVC, 67.1% and BIA roads had 27.6% of all roads.

Figure 2.



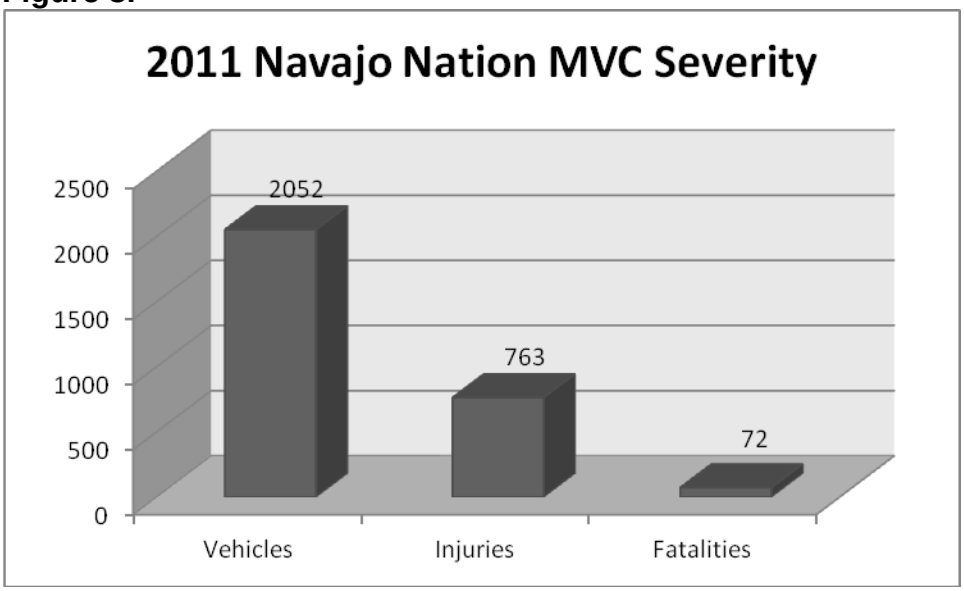
Routes with Highest Crashes, Table 1. They contributed to 72% or 988 of the total 1,373 MVC in 2011.

Table 1. Routes with Highest Crashes for Each Agency in 2011

AGENCY	BIA Route	# Crashes	State Route	# Crashes
N32 Northern	N36	20	491	128
	N13	10	64	98
	N34	6	160	28
N33 Western	N59	10	89	110
	N16	5	160	76
	N1017	5	98	24
N34 Eastern	N9	6	264	26
	N11	4	371	41
	N48	2	602	36
N35 Central	N4	13	191	48
	N7	9	~	~
	N12	7	~	~
N36 Southern	N12	37	264	88
	N15	27	40	83
	N112	7	491	32
N00 New Lands	~	~	191	2
	~	~	~	~
	~	~	~	~
N48 NIIP	~	~	~	~
	~	~	~	~
	~	~	~	~

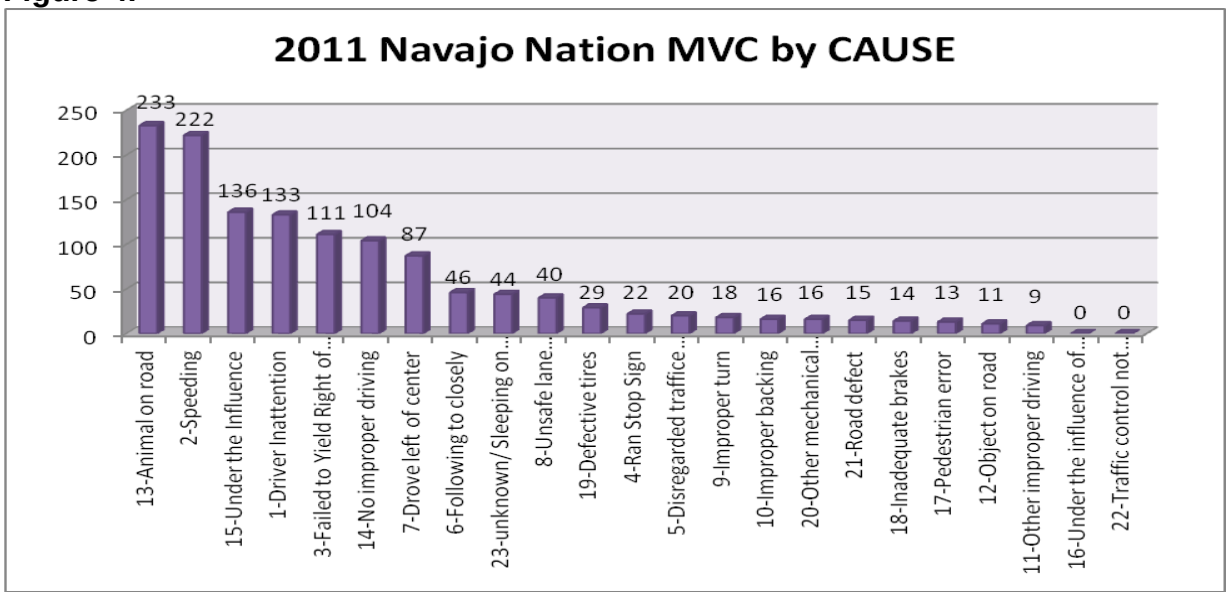
2.3 Severity: The 2011 Navajo Nation MVC involved 2,052 vehicles and property damages, resulting in 763 injuries and 72 fatalities, Figure 3.

Figure 3.



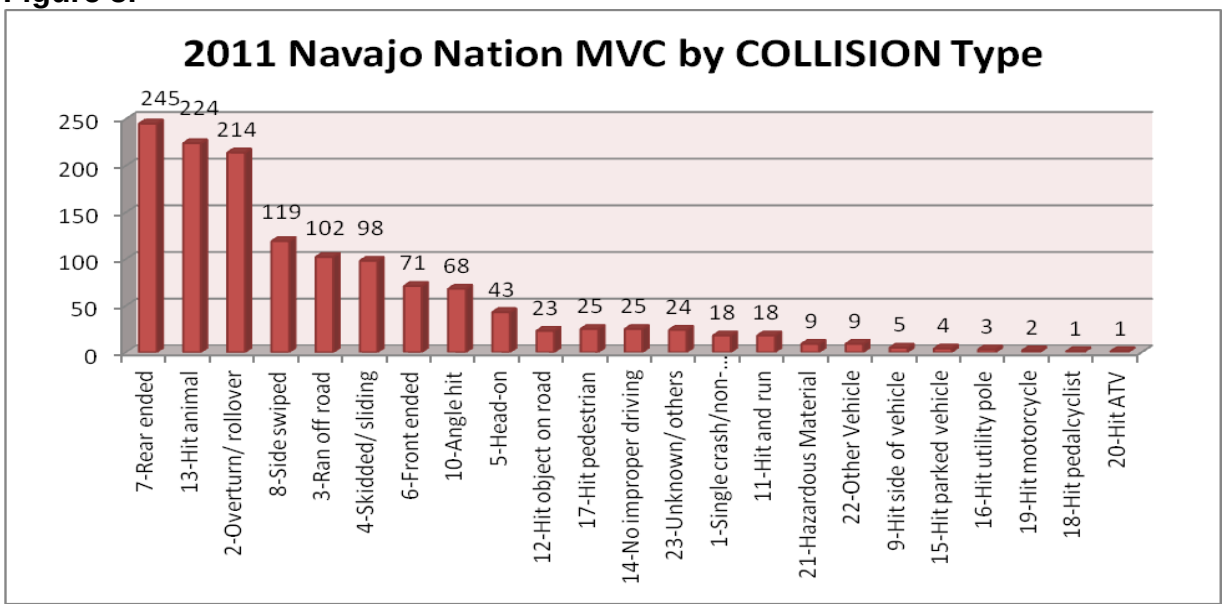
2.4 Causes: Animals, Speeding, Driver Inattention, and Under the Influence were the four major causes of the 2011 MVC: 20.9%, 19.9%, 12.2% and 11.9% respectively.

Figure 4.



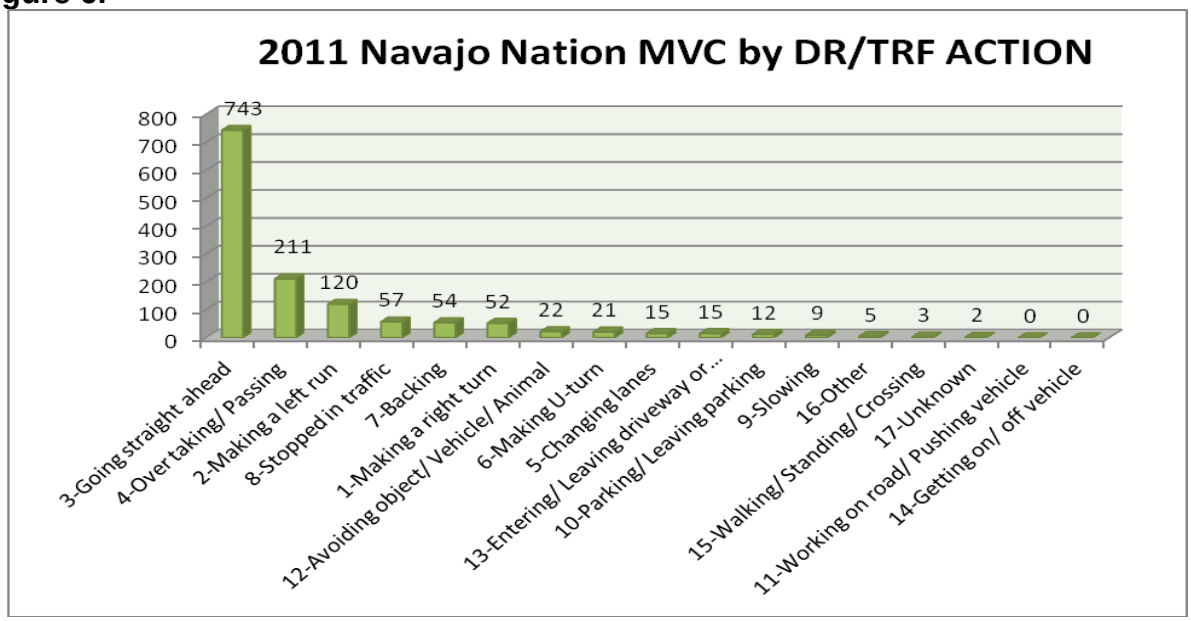
2.5 Collision: Of the total 1373 MVC in 2011, 245 crashes or 22% were Rear-ended; 224 or 20.1% had Hit an Animal; 214 or 19.2% were Overturn/ Rollover; and 119 or 10.7% had Side Swiped another vehicle.

Figure 5.



2.6 Driver/Traffic Action: The majority of crashes, 743 or 66.6% happened when drivers were going straight, 211 or 18.9% drivers were Over taking/passing, 120 or 10.8% were making a left turn, and 57 or 5.1% were Stop in Traffic.

Figure 6.



ACKNOWLEDGEMENT

This report cannot be realized without the hard work of data collection by the Transportation Planning Program's GIS Technician. The final data were quality checked by TTPP GIS Technician and mapped by GIS Technician. TTPP also thanks the Public Safety Chief of Police, Management Information System Department Manager, Police District Commanders and Record Sections in their assistance and permitting our staff to have access to the 2011 police reports.