

## **Identifying Numbers MPC-353**

### **Project Title:**

Comparing Crash Trends and Severity in the MPC Region

### **University:**

University of Wyoming

### **Principal Investigators:**

Dr. Khaled Ksaibati Ph.D., P.E.  
University of Wyoming  
(307) 766-6230  
khaled@uwyo.edu

Kimberly Vachal, Ph.D.  
Upper Great Plains Transportation Institute  
North Dakota State University  
Phone: (701)231-6425  
Fax: (701)231-1945  
kimberly.vachal@ndsu.edu

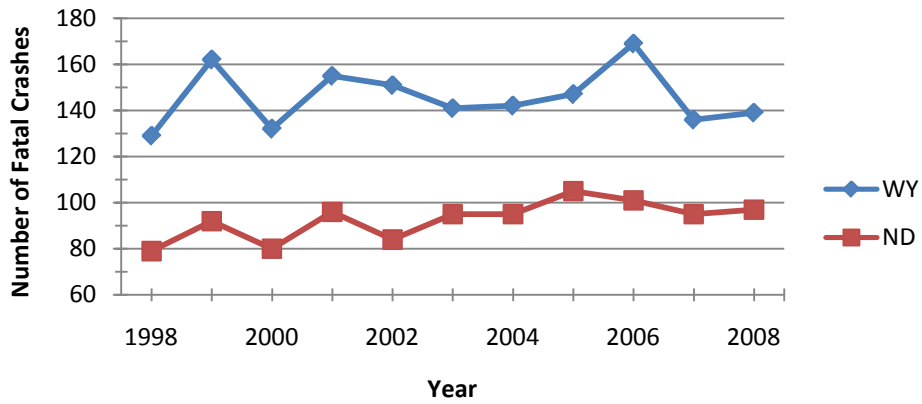
### **External Project Contact:**

Mr. Matt Carlson, P.E.  
State Highway Safety Engineer  
Wyoming Department of Transportation  
(307) 777-4450  
Matt.Carlson@dot.state.wy.us

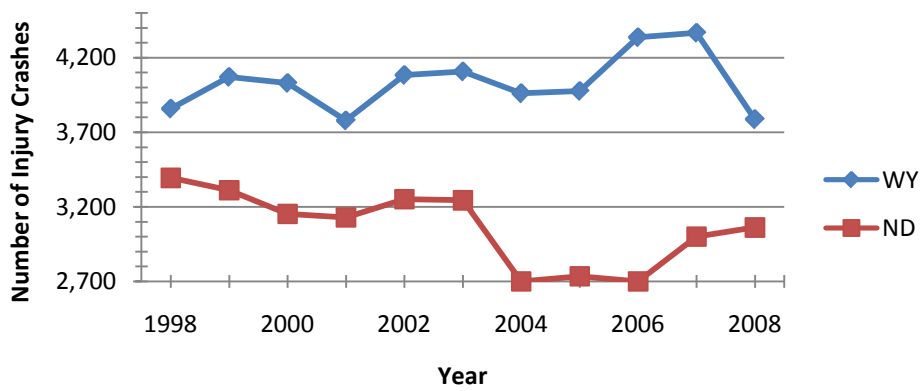
### **Description of Research Problem:**

The states of Wyoming and North Dakota are located geographically in the same region and they have relatively similar populations. However, a quick look at the crash numbers and severity in both states, Figures 1 through 3, clearly show that North Dakota has significantly lower crash numbers.

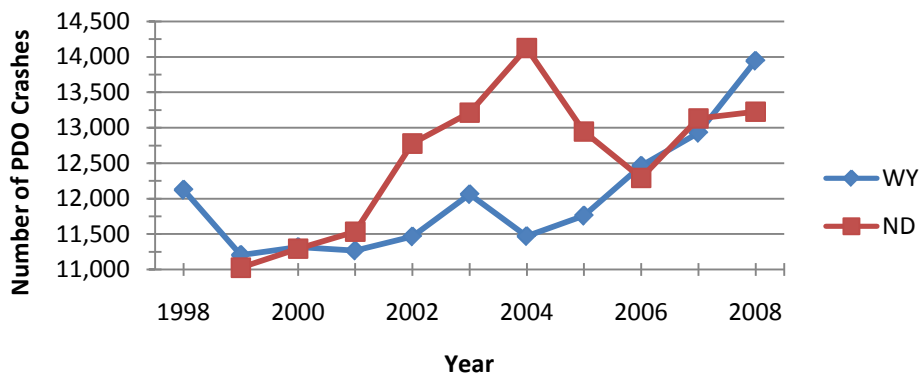
### Figure 1. Fatal Crashes



### Figure 2. Injury Crashes



### Figure 3. Property Damage Only Crashes



This research study will be conducted by the University of Wyoming and the North Dakota State University. All data related to travel behavior, roads geometry, traffic safety laws enforced in both states, as well as statistics which can help in explaining crashes will be collected. Researchers in both states will then summarize the data and conduct a comprehensive analysis to identify the specific reasons behind the significant differences in crashes in both states. A follow up study will include other states in the region such as South Dakota, Utah, and Colorado.

### **Research Objectives:**

The main objective of this research is to identify the differences in crash rates and severity between Wyoming and North Dakota. After identifying the differences, it is important to try to determine if these differences are due to travel behavior, traffic safety laws, or any other conditions contributing to crashes.

### **Research Approach/Methods:**

The following tasks will be performed in this study:

- Conduct a comprehensive literature review.
- Obtain Crash data in Wyoming and North Dakota for the Past 10 years.
- Obtain information on Traffic Safety Laws enforced in both states.
- Obtain information on general geometric condition, roadway classification, MVT, as well as other factors contributing to crashes in both states.
- Summarize the collected data in a comprehensive data base.
- Conduct a comprehensive analysis on the collected data.
- Prepare a report summarizing the conclusions and recommendations.

The second phase of this study will include other states in the MPC region.

### **MPC Critical Issues Addressed by the Research:**

Transportation Safety and Security

### **Contributions/Potential Applications of Research:**

The literature review which will be conducted will insure that the findings of similar projects will be considered in the development of the methodology of this study.

This project will help in identifying factors contributing to lower number of crashes in North Dakota when compared to Wyoming.

### **Potential Technology Transfer Benefits:**

The Wyoming LTAP center will insure the dissemination of the findings of this study.

**Time Duration:**

July 1, 2010 - June 30, 2011

**Total Project Cost:**

\$91,298

**MPC Funds Requested:**

\$43,466

**Source of Matching Funds:**

Wyoming Department of Transportation \$47,832

**TRB Keywords:** transportation safety, road safety, road safety review, road classification, roadway geometric conditions, crashes