Appalachian Transportation Institute (ATI) Research Project Description

Project Number: ATI TRP 99-14
Project Title: Drowsy Driving Problems in West Virginia

Primary Investigator Contact Information:
Name: Robert B. Walker, M.D
Institution: Nick J. Rahall II Appalachian Transportation Institute
Address: Marshall University, 400 Hal Greer Blvd., Huntington, WV 25755
Department: Marshall University Medical School, Dept. of FCH
Phone:(304) 691-1198
Email address:kinney@marshall.edu

External Project Contact:
Name: Tracy Smith
Institution: Marshall University School of Medicine
Address:1600 Hal Greer Blvd., Suite 1500, Huntington, WV 25701
Phone:(304) 691-1179
Email address:tsmith@marshall.edu

Project Objective: This project will compare accident data related to drowsy driving in West Virginia to the remainder of the US and suggest preventive strategies including targeted outreach activities to reduce drowsy-driving accidents.

Abstract: Motor vehicle crashes are a major public health problem - they are the leading cause of death for persons aged 5 - 29 years and leading cause of injury for all age groups.1 To address this public health concern, efforts to increase seat-belt use, decrease drinking and driving, and increase the use of child safety seats have successfully reduced motor vehicle fatalities. However, an are receiving very little attention is that of Drowsy/Fatigued driver related crashes.

In 1996 Congress mandated an Expert Panel to investigate the prevalence, associated behaviors, and risks of drowsy driving. Since then numerous organizations have begun to examine the problem and suggest strategies to reduce these types of accidents. The American Medical Association's Council on Scientific Affairs published a report describing drowsy/fatigue related motor vehicle crashes in the Journal of the American Medical Association in June of 1998. This report urged physicians to take an active role in "protecting the health and safety of affected drivers and all highway users".

These interest groups have produced eye-opening data. Drowsy driving contributes to thousands of auto accidents every year. According to the National Commission on Sleep Disorders sleep related accidents cost an estimated $46 billion a year. The US National Highway Traffic Safety

Administration reports that drowsy drivers account for at least 100,000 reported crashes annually. The National Transportation Safety Board estimates that thirty-one percent of fatal commercial truck crashes are the result of drowsy driving. Roughly 40,000 non-fatal injuries and 1550 fatal injuries arise annually as a result of this type of crash.3

Although most, but not all, states reference fatigue and drowsiness causal factors on their standard accident report forms, these types of crashes are under-reported. There are no accurate techniques for identifying a driver's state of alertness and many drivers involved in accidents downplay their driving condition to avoid blame.

Terrain, regional occupations and industries, and road conditions throughout Appalachia make driving drowsy an especially hazardous condition in West Virginia. This project will suggest a method for reducing accidents related to driving drowsy which may serve as a model for other rural states.

Task Descriptions:
1. Review motor vehicle crash data relative to driver fatigue/drowsiness for the countries included in WV DOT, Division of Highways District 2.
A. Meet with the Division of Traffic Engineering personnel to evaluate reporting sources for crash data.
B. Meet with Division of Motor Vehicles to determine how crash reports are filed, their physical location, and their availability.

2. Identify data sample
A. Identify sleep-related crashes for the counties included in the pilot
B. Identify non-sleep related crashes for the counties included in the pilot.
C. Identify a random-sample population

3. Survey the populations (Draft of the survey instrument is included in the appendices)
A. Survey the drowsiness-related sample
B. Survey the non-drowsiness related sample
C. Survey the random sample

4. Data Analysis
A. Descriptive Analysis
B. Regression Analysis (estimate odds ratio of sleep related versus non- sleep related)
C. Geo-spatial Mapping of crash corridors
D. Economic Impact analysis of these types of crashes
E. Recommendations relative to:
1. Specific populations at risk
2. The cause of the drowsiness-related crashes especially prevalent in West Virginia

3. Reporting these types of crashes in West Virginia
4. Suggestions for prevention in West Virginia with costs
5. Submit summary report to WV Division of Traffic Engineering for review.
6. Development of a clear and accurate description of the project that can be implemented by other parties. (Project manual).

Milestones, Dates, Schedule:
Phase 1: Gather Data and Information November, 2000 - March, 2001
Phase 2: Data Analysis March - June, 2001
Phase 3: Develop Implementation Plan June - August, 2001
Phase 4: Submit for Publication August - November, 2001

Budget: $84,684.00

Student Involvement: The project will provide employment support for at least 1 undergraduate and 1 graduate student. The student workers will support the Principal Investigator as project assistants. This project is not anticipated to lead to a student thesis directly.

Relationship to Other Research Projects: This project is related to ATI TRP 99-23, Survey of Truck Parking Places (Private) in WV.

Technology Transfer Activities: Final reports will be available on the ATI website. All, ATI Principal Investigators will present findings through the ATI Transportation Seminar Series to invited guests from WVDOT, USDOT, other ATI Principal Investigators, students and other invited guests. Other opportunities to present the project results will be explored including conferences and peer reviewed journals, etc.

Potential Benefits of this Project:
The Project goal is to reduce vehicular accidents related to driving drowsy by obtaining information from accident reports and drivers and reviewing the information in terms of economic, cultural, geographic, and structural factors found in West Virginia.

TRB Keywords: Drowsy Crash Run-offs Asleep Sleep