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| **State Planning and Research Program**  **Quarterly Report** | | |
| **PROJECT TITLE**: Environmental Factors Causing Fatigue in Equipment Operators during Winter Operations  **OBJECTIVES**: The goal is to develop a series of cost-effective, realistic recommendations for reducing or eliminating fatigue that impacts equipment operators during winter operations. | | |
| **PERIOD COVERED**: July 2013 to September 2013 | | |
| **PARTICIPATING AGENCIES:** Minnesota Department of Transportation and the Clear Roads Technical Advisory Committee | | |
| **PROJECT MANAGER**: Debra Fick/Tom Peters  **LEAD AGENCY**: Mn/DOT  **PRINCIPAL INVESTIGATOR**: Jeff Hickman | **SP&R PROJECT NO**:  MnDot Contract# 99084 | PROJECT IS:  Planning  X Research & Development |
| **ANNUAL BUDGET**: $124,991 (total) | **PROJECT EXPENDITURES TO DATE**: (as of 9/30/2013)  $72,252.75 | |
| **WORK COMPLETED:**   * Questionnaire data from approximately 1,043 operators and 453 safety managers have been entered into a database. * A total of 22,457 triggers from the instrumented trucks have been validated by data analysis. Of these triggers, 12,399 were from drivers that did not participate in the study and an additional 907 occurred after data collection ended (but before the data acquisition systems were removed from the trucks). These triggers were deleted. Thirteen of the remaining triggers were valid safety-critical events from participating drivers (1 crash, 1 tire strike, 4 near crashes, and 7 crash-relevant conflicts). Though this number may seem low, given the number of trucks (two), exposure (few driving hours), and length of participation (only 3 months) the number of safety-critical events is higher than other naturalistic driving studies. | | |
| **SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER**:   * The Virginia Tech Transportation Institute (VTTI) will complete the content analysis on the questionnaire data. * VTTI will complete data analyses on the operator and safety manager questionnaire data. * VTTI will complete reduction of the 13 safety-critical events. * VTTI will begin to analyze the Actigraph data on participating drivers’ sleep quantity and quality. | | |
| **STATUS AND COMPLETION DATE**: No problems to report. A no-cost time extension was approved on September 24, 2013. The project is on schedule to be completed by March 31, 2014. | | |