

State Planning and Research Program Quarterly Report

PROJECT TITLE: *Identification and Recommendations for Correction of Equipment Factors Causing Fatigue in Snowplow Operations*

OBJECTIVE: Identify in-cab and external equipment factors that cause operator fatigue in snowplow operations

PERIOD COVERED: October 1, 2016, to December 31, 2016

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: Jeffrey Hickman

SP&R PROJECT NO:
MnDOT Contract
No. 1001325

Federal Project Number:
TPF-5(218)

PROJECT IS:

Planning
 Research & Development

ANNUAL BUDGET: \$200,000 (project budget)

PROJECT EXPENDITURES TO DATE: \$26,864.89

WORK COMPLETED:

- **Task 3: Literature Search.** Task 3 was granted final approval on October 10, 2016.
- **Task 4: Develop Questionnaire.** Task 4 was granted final approval on October 10, 2016.
- **Task 5: IRB Approval.** The researchers received approval from the Virginia Tech Institutional Review Board (IRB) on October 31, 2016.
- **Task 6: Pilot Test Questionnaire.** Virginia Tech Transportation Institute (VTTI) researchers completed the pilot test on November 9, 2016. During the pilot test, eight snowplow operators from four different counties in Southwest Virginia offered suggestions to improve the questionnaire. As a result of the pilot test, VTTI researchers revised the questionnaire. These revisions included (1) replacing “winter operations” with “winter emergencies” where appropriate; (2) adding an answer option to Question 8 on the questionnaire; and (3) adding a question regarding the placement of interior liquid crystal display (LCD) screens. These changes were approved by the Clear Roads project subcommittee on November 18, 2016. VTTI received IRB approval for these changes on December 13, 2016.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- The research team will finalize the online version of the questionnaire and subsequently distribute the questionnaire to each state’s representative in Clear Roads. These representatives will then facilitate the distribution of questionnaires within their state. All questionnaire responses will be collected by February 28, 2017.
- The Clear Roads subcommittee will provide VTTI with contact information for equipment manufacturers. A member of the research team will then conduct an unstructured phone interview with the equipment manufacturers.
- VTTI researchers will begin to analyze the questionnaire results. Descriptive analyses will be used to assess snowplow drivers’ opinions and perceptions of equipment factors that cause fatigue.

STATUS AND COMPLETION DATE:

This project is currently ongoing and ends on September 30, 2017.