

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: July 1, 2016 to September 30, 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: \$14,845.79

WORK COMPLETED:

- **Task 3: Literature Search.** The research team met with the Advisory Board to finalize the list of specific equipment and technologies that may impact snowplow driver fatigue. A draft literature review was completed on August 29, 2016, using the Advisory Board's recommendations.
- **Task 4: Develop Questionnaire.** In Task 4, the research team developed the snowplow operator questionnaire. This questionnaire is designed to assess the opinions and perceptions of snowplow drivers regarding equipment factors that affect fatigue in snowplow drivers (e.g., snow/ice removal equipment, lighted displays, truck lighting, etc.).

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- On October 6, 2016, VTTI researchers will meet with the Advisory Board to discuss the literature review results and questionnaire. The research team will revise (if necessary) the literature review and questionnaire based on this discussion.
- As Tasks 6 (pilot testing the questionnaire) and 7 (full-scale implementation of the questionnaire) entail the involvement of human subjects, VTTI is required to obtain Virginia Tech Institutional Review Board (IRB) approval prior to performing any data collection activities. The research team will submit the required materials to the Virginia Tech IRB for review and approval by October 31, 2016.
- The questionnaire will be distributed to a small sample of snowplow operators. The results from this limited distribution questionnaire will be analyzed to ensure valid responses. Revisions (if necessary) to the questionnaire will then be made, and the final questionnaire will be submitted to the Advisory Board for approval. Any changes to the questionnaire will require an amendment to the approved IRB application. This task will be completed by December 31, 2016.

STATUS AND COMPLETION DATE:

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