

## State Planning and Research Program Quarterly Report

**PROJECT TITLE:** *Defensive Driving for Snowplow Operators*

**OBJECTIVES:** Develop two comprehensive and engaging winter maintenance operator training modules on defensive driving and safe driving.

**PERIOD COVERED:** April 1, 2019 to June 30, 2019

**PARTICIPATING AGENCIES:** Minnesota Department of Transportation and the Clear Roads Technical Advisory Committee

**PROJECT MANAGER:**  
Lisa Jansen / Tom Peters

**SP&R PROJECT NO:**  
MnDOT Contract No.:  
1031541

**PROJECT IS:**

Planning  
 Research & Development

**LEAD AGENCY:** MnDOT

Federal Project Number:  
TPF-5(353)

**PRINCIPAL INVESTIGATOR:**  
Matthew Camden, VTTI

**ANNUAL BUDGET:** \$70,000 (total)

**PROJECT EXPENDITURES TO DATE:** \$6,991.16

### **WORK COMPLETED:**

- **Task 2: Literature Review.** In Task 1, the Virginia Tech Transportation Institute (VTTI) research team conducted a literature review to document current safe and defensive driving practices with a focus on winter maintenance operators. The draft literature review was submitted on April 30, 2019. Based on feedback from the Clear Roads project subcommittee, the VTTI team submitted a revised literature review on May 27, 2019. Task 2 received final approval on June 4, 2019.
- **Task 3: IRB Approval.** VTTI received initial approval from Virginia Tech's Institutional Review Board (IRB) on April 30, 2019. Additionally, VTTI submitted a draft questionnaire to Clear Roads on April 30, 2019. Based on feedback from the Clear Roads project subcommittee, VTTI submitted a revised questionnaire on May 27, 2019. This questionnaire received final approval on June 4, 2019. The revised questionnaire received IRB approval on June 14, 2019.
- **Task 4: State Department of Transportation Questionnaire.** VTTI created an online version of the approved questionnaire. As in Camden et al. (2014) and Camden et al. (2017), the VTTI team worked with Clear Roads member states to distribute the questionnaire. Information related to the study and a link to the questionnaire were distributed to all Clear Roads member states on June 18, 2019.

### **SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:**

- **Task 4: State Department of Transportation Questionnaire.** VTTI will continue to collect responses to the online questionnaire. Additionally, VTTI will distribute the questionnaire to winter maintenance personnel in local governments through the American Association of State Highway and Transportation Officials (AASHTO) Snow and Ice Listserv. Based on data provided, VTTI will select three to five agencies to be interviewed in Task 5.
- **Task 5: Follow-up Interviews.** After approval of from the Subcommittee, the VTTI team will contact managers and operators (from three to five agencies) with significant experience and understanding of winter maintenance vehicle crashes. These interviews will be designed to identify (1) common factors associated with winter maintenance vehicle crashes involving other vehicles and (2) safe and defensive driving strategies operators have used to successfully avoid crashes. The team will also review winter maintenance crash data (if available) from the selected agencies.
- **Task 6: Analysis and Recommendations.** VTTI will start analyzing the data obtained from the questionnaire and interviews. Based on the literature review, questionnaire, and interview data, the VTTI team will identify common crash causes and operator actions that may reduce the likelihood of crashes. These results will be used to develop recommendations for (1) overall safe driving best practices and (2) defensive driving techniques.

### **STATUS AND COMPLETION DATE:**

This project is ongoing and ends on August 31, 2020.