

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: July 1, 2019 to September 30, 2019

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

PROJECT MANAGER:

Lisa Jansen/Tom Peters

LEAD AGENCY: MnDOT

PRINCIPAL INVESTIGATOR:

Matthew Camden, VTTI

SP&R PROJECT NO:

MnDOT Contract No.:
1031541

Federal Project Number:
TPF-5(353)

PROJECT IS:

Planning
 Research & Development

ANNUAL BUDGET: \$70,000
(total project budget)

PROJECT EXPENDITURES TO DATE: \$13,570

WORK COMPLETED:

- **Task 4: State Department of Transportation Questionnaire.** VTTI closed the online questionnaire on July 30, 2019. VTTI analyzed these data and provided recommendations to the Clear Roads subcommittee for follow-up interviews on July 31, 2019. VTTI recommended the following five winter maintenance agencies as candidates for follow-up interviews and dataset reviews: California, Colorado, Idaho, Ohio, and Wyoming. Additionally, VTTI recommended the following five crash types common crash types for further investigation: hitting fixed objects, run-off-road crashes, backing crashes, crashes where another vehicle rear-ended the snowplow, and wing plow strikes. VTTI and the Clear Roads subcommittee meet on August 14, 2019 to discuss VTTI's recommendations. Following this discussion, it was decided that VTTI replace Wyoming with Montana as a follow-up interview. All other recommendations were approved.
- **Task 5: Follow-up Interviews.** VTTI completed all interviews with the five selected states plus Virginia, for a total of six states. These interviews included drivers, driver managers, maintenance superintendents, and safety managers. VTTI conducted 19 interviews, including: two in California, three in Colorado, three in Idaho, seven in Montana, one in Ohio, and three in Virginia. To date, VTTI has received crash datasets from Ohio. However, VTTI is in the process of collecting crash datasets from Montana, Idaho, Colorado, and Virginia. VTTI could not get access to the crash data from California.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- **Task 6: Analysis and Recommendations.** VTTI will analyze 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.
- **Task 7: Draft Modules.** VTTI will begin developing the two draft training modules based on the recommendations developed in Task 6. One training will include general safe driving strategies that snowplow operators may use to prevent crashes (e.g., reducing distraction, fatigue management, wearing a seat belt, etc.). A second training will include defensive driving strategies that snowplow operators may use to prevent crashes (e.g., hazard identification, situational awareness, visual scanning, etc.). Additionally, VTTI will begin to develop the instructional guides for instructors and learners and post-training evaluations. The instructional guides will include written explanations and illustrations needed to explain the subject matter to the learners beyond what is available in the PPT slides.

STATUS AND COMPLETION DATE:

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