

State Planning and Research Program Quarterly Report

PROJECT TITLE: Clear Roads Administration, Research Support and Information Services

OBJECTIVES: Clear Roads is a pooled fund research project aimed at rigorous testing of winter maintenance materials, equipment, and methods for use by highway maintenance crews. The Clear Roads Technical Advisory Committee (TAC) contracted with CTC & Associates LLC to perform the administrative functions associated with maintaining the pooled fund project as well as information services that support technology transfer. This report summarizes activities conducted under this contract over the last three months.

PERIOD COVERED: January through March 2022

PARTICIPATING AGENCIES: Minnesota Department of Transportation

PROJECT MANAGER: Tom Peters

SP&R PROJECT NO:
1030951

PROJECT IS:

LEAD AGENCY: MnDOT

Planning
 Research &
Development

PRINCIPAL INVESTIGATOR:
CTC & Associates LLC

PROJECT BUDGET:
\$1,037,155.52

PROJECT EXPENDITURES TO DATE:
\$873,779.73

WORK COMPLETED:

TAC Meetings

- Continued planning for the 2022 spring virtual meeting on April 12-14.
- Coordinated with MnDOT and other Clear Roads partners to begin planning for the fall 2022 meeting.

Administration and Marketing

- Updated the Clear Roads website with current project status, project deliverables, webinars, administrative documents, and modifications to the home page.
- Maintained and updated commitments, transfers, and overall budget information for the pooled fund in coordination with MnDOT. Communicated with TAC members and their appropriate pooled fund personnel to facilitate transfers for fiscal year 2022.
- Supported efforts of TAC members, including changes in state representation. Total number of members remains at 36.

Information Services

- Used Constant Contact to distribute 4 Clear Roads news posts.
- Compiled a compendium of winter maintenance-related sessions for the 2022 TRB Annual Meeting.
- Completed research briefs on the following project:
 - Synthesis of Technical Requirements and Considerations for Automated Snowplow Route Optimization
 - Entry-Level Driver Training (CDL) for Maintenance Equipment Operators
- Continued work on the following research briefs:
 - Expanding Application Rate Guidance for Salt Brine Blends for Direct Liquid Application and Anti-icing
 - Measuring the Efficiencies of Tow Plows and Wing Plows
 - AWSSI Enhancements
- Conducted project closeout webinars for the following projects:
 - Measuring the Efficiencies of Tow Plows and Wing Plows
- Coordinated the development and performance of two train-the-trainer webinars for the Entry-Level Driver Training for Maintenance Equipment Operators project.
- Worked with the editor of the APWA reporter to publish two articles in 2022. One will be this summer based on the Entry Level Driver Training project, while the other will be published later this fall and will be based on three Clear Roads projects that produced tools to assist members with winter maintenance decision-making.
- Continued work on an improved online deicer product submission form for vendors on the Qualified Products List webpage.
- Completed the first version of the Clear Roads Snow and Ice Equipment Online Database.

Research Support

New projects

- Coordinated with MnDOT, project PIs, and Clear Roads subcommittees to kick off the following FFY2021 projects:
 - Grip Sensor Technology and Salt Applications

- The Efficacy and Environmental Impact of Non-Chloride Deicers
- Training Module Development for CR 18-03 Evaluation of SSI/WSI Variables
- Evaluation of Electric Vehicle Technologies for Winter Operations
- Coordinated the submission of research proposal ideas in advance of the 2022 spring online meeting.

Research in progress

- Continued coordination with the PIs and subcommittees to schedule check-in teleconferences and facilitate the review of deliverables for:
 - High Performance Blade Evaluation
 - Standard Test Procedures for Ice Melting Capacity of Deicers
 - Understanding the NaCl Phase Diagram
 - Evaluation of Indoor Automated Stockpile Measurement Systems
 - Expanded Use of AVL/GPS Technology
 - Using GIS to Highlight Highway Segments Sensitive to Deicing Materials
 - Salt Shed Design Template

Implementation

- Developed a brief report that captures the implementation opportunities and impacts for each research project.
- Continued to provide access (246 agencies / entities) to the training modules developed by the Clear Roads project, Snowplow Operator and Supervisor Training.
- Provided access (434 agencies / entities) to the training modules developed by the Clear Roads project, Entry-Level Driver Training (CDL) for Maintenance Equipment Operators.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Attend and provide support for the spring online meeting. Draft meeting minutes and begin addressing action items.
- Continue to provide support to MnDOT to get the final three FY2021 projects under contract.
- Coordinate development of scopes of work for 2022 research projects selected as part of the 2022 spring meeting. Send them to MnDOT to be processed into RFPs and posted for investigator response.
- Update the Clear Roads generic presentation for use by member states.
- Collect equipment and administer the survey for the 2021-2022 Product Experience Survey.
- Send out the first survey for the Clear Roads Snow and Ice Equipment Online Database to our member states.
- Complete work on the following research briefs:
 - Expanding Application Rate Guidance for Salt Brine Blends for Direct Liquid Application and Anti-icing
 - Measuring the Efficiencies of Tow Plows and Wing Plows
 - AWSSI Enhancements
- Continue to send draft dissemination plans to subcommittees for their review and comment.
- Continue to update the Clear Roads website with both project and administrative information.
- Assist with coordinating and tracking funding transfers to TPF-5(479).
- Complete and submit the final report for TPF-5(218).
- Research, write, and publish winter maintenance news posts.
- Use Constant Contact to distribute the winter maintenance news posts, completed research results, and other information.
- Continue to coordinate with investigators and the Clear Roads subcommittees on projects in progress.
- Continue to coordinate the completion of post project closeout forms and research use surveys.

STATUS AND COMPLETION DATE:

The contract tasks are progressing as planned. The current completion date is June 30, 2022.