

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: October through December 2024

PARTICIPATING AGENCIES: Minnesota Department of Transportation

PROJECT MANAGER: Tom Peters

SP&R PROJECT NO:
1053038

PROJECT IS:

LEAD AGENCY: MnDOT

☐ Planning
☒ Research &
Development

PRINCIPAL INVESTIGATOR:
CTC & Associates LLC

PROJECT BUDGET:
\$680,096.02

PROJECT EXPENDITURES TO DATE:
\$434,538.58

WORK COMPLETED:

TAC Meetings

- Completed minutes for the 2024 fall in-person meeting and posted them on the Clear Roads website. Also posted state and industry partner reports from the fall meeting to the members only page.
- Conducted a virtual meeting of the TAC on October 22 to review and obtain feedback from the membership on the responses to the 2024 RFPs.
- Identified, selected, and signed an MOU with the Embassy Suites in Bloomington, MN for the fall 2025 in-person meeting. Will sign a contract once amendment #2 is in place between MnDOT and CTC.

Administration and Marketing

- Updated the Clear Roads website with current project status, project deliverables, webinars, administrative documents, and modifications to the home page.
- Updated the Other Videos page to Webinars and Other Videos. This newly updated and formatted page now includes all final project webinars as well as implementation webinars.
- 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 continue to facilitate transfers for fiscal year 2025.
- Supported efforts of TAC members, including changes in state representation. The total number of members remains 39.

Information Services

- Used Constant Contact to distribute 7 Clear Roads news posts.
- Continued work on the following synthesis projects.
 - Management of Video Recordings and Images taken from Truck-mounted Cameras
 - Brine-making Practices
 - UAV Uses for Winter Maintenance
- Commenced work on research briefs for the following projects:
 - Salt Shed Design Template
 - Best Management Practices for Liquid Chloride Storage and Pumping Systems
 - Use of Dashboards for Winter Operations
- Conducted final project webinars for the following projects:
 - Salt Shed Design Template
 - Best Management Practices for Liquid Chloride Storage and Pumping Systems
 - Use of Dashboards for Winter Operations
- Finalized collection of responses for the 2023-2024 Annual Survey of State Winter Maintenance Data. Beginning data analysis.
- Continued to coordinate with the Qualified Products List subcommittee, Clear Roads TAC, and vendors to renew deicer products on the QPL before they expire on 12/31/2024.
- Created and printed a Clear Roads poster for display as part of the AJE35 RIIM (Research Innovation Implementation

Research Support

New projects

- Coordinated with MnDOT, project investigators, and Clear Roads project subcommittees to finalize work plans for the FY2024 projects below to submit to MnDOT for contracting.
 - Toxicity Standards for the QPL
 - Effective Pretreatment Methods for Events Beginning as Rain
 - Salt Management Training for Non-DOT End Users

Research in progress

- Continued coordination with the PIs and subcommittees to schedule check-in teleconferences and facilitate the review of deliverables for:
 - Grip Sensor Technology and Salt Applications
 - Determining the Migration of Chloride-based Deicers through Different Soil Types
 - Effects of Additives in Deicing Salts at Lower Temperatures
 - Evaluation of Direct Liquid Application of Salt Brine vs Granular Salt as Measured through Various Performance and Safety Metrics
 - Development of a Public Service Announcement Library
 - Quantifying the Economic Value of Snow and Ice Operations Success
 - Updating the Impact of Capital Projects Decision Support Tool
 - Using Vegetation Management Practices Near Roads to Leverage the Benefits of Solar Radiation
- Coordinated with the PI and subcommittee to facilitate the review of final deliverables and closeout projects:
 - Salt Shed Design Template
 - Best Management Practices for Liquid Chloride Storage and Pumping Systems
 - Use of Dashboards for Winter Operations

Implementation

- Developed a brief report that captures the implementation opportunities and impacts for each research project.
- Continued to provide access (398 agencies / entities) to the training modules developed by the Clear Roads project, Snowplow Operator and Supervisor Training.
- Provided access (1,458 agencies / entities) to the training modules developed by the Clear Roads project, Entry-Level Driver Training (CDL) for Maintenance Equipment Operators.
- Coordinated the completion of project closeout forms for recently completed projects.
- Continued to facilitate implementation discussions (at the program and project level) during regular project and face-to-face meetings as appropriate.
- Conducted Implementation Webinars on the following projects.
 - Product Proficiency Sample Program (11/1)
 - Virginia DOT's Experience with Stockpile Reports (12/13)

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Plan and develop materials for the 2025 spring meeting in Richmond, VA.
- Contract with Embassy Suites to host the fall 2025 joint meeting in Bloomington, MN.
- Coordinate with MnDOT, Clear Roads, and investigators to finalize work plans for 2025 projects for contracting with MnDOT.
- Complete analysis of responses and post the 2023-2024 Annual Survey of State Winter Maintenance Data.
- Complete draft synthesis reports, coordinate review by project subcommittees, and revise / post those reports for the following projects.
 - Management of Video Recordings and Images taken from Truck-mounted Cameras
 - Brine-making Practices
 - UAV Uses for Winter Maintenance
- Commence work on the 2024 synthesis projects.
- Work with PIs to finalize the following project including gaining approval of final deliverables, conducting a project closeout webinar and drafting the research brief.
 - Effects of Additives in Deicing Salts at Lower Temperatures
- Compile and post on the website the winter maintenance-related technical sessions at the 2024 TRB Annual Meeting.
- Continue to update the Clear Roads website with both project and administrative information.
- Assist with coordinating and tracking funding transfers to TPF-5(479).
- 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 project closeout forms.
- Conduct Research Development Group meetings in January, February, and March.
- Continue to respond to requests for Clear Roads training materials.

STATUS AND COMPLETION DATE:

The contract tasks are progressing as planned. The completion date was June 30, 2025.