

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 1 through December 31, 2025

PARTICIPATING AGENCIES: Minnesota Department of Transportation

PROJECT MANAGER: Adam Wellner

SP&R PROJECT NO:
1053038

PROJECT IS:

LEAD AGENCY: MnDOT

☐ Planning
☒ Research &
Development

PRINCIPAL INVESTIGATOR:
CTC & Associates LLC

PROJECT BUDGET:
\$1,130,075.18

PROJECT EXPENDITURES TO DATE:
\$829,497.62

WORK COMPLETED:

TAC Meetings

- Completed minutes for the 2025 fall in-person meeting and posted them on the Clear Roads website. Also posted state and industry partner reports from the fall meeting on the members only page.
- Identified, selected, and signed an MOU with the Hilton, Mystic, Connecticut for the fall 2026 in-person meeting. Will sign a contract once amendment #3 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.
- Continued to update the Webinars and Other Videos page with Final Project Webinars and Implementation Webinars.
- Continued to work with the Qualified Products List subcommittee providing technical support to the online Vendor Submission Form.
- 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 2026.
- Supported efforts of TAC members, including changes in state representation. The total number of members remains 39.

Information Services

- Used Constant Contact to distribute 6 Clear Roads news posts.
- Continued work on the following synthesis projects:
 - Snow & Ice, 2030
 - Best Practices for Research Implementation
 - Predictive Methods to Update Road Condition Reporting
 - Update on the Status of AVL/GPS for Winter Operations
- Commenced work on research briefs for the following projects:
 - Evaluation of Direct Liquid Application of Salt Brine vs Granular Salt as Measured through Various Performance and Safety Metrics
 - Quantifying the Economic Value of Snow and Ice Operations Success
 - Using Vegetation Management Practices Near Roads to Leverage the Benefits of Solar Radiation
- Recorded and posted the following final project webinars:
 - Evaluation of Direct Liquid Application of Salt Brine vs Granular Salt as Measured through Various Performance and Safety Metrics
 - Quantifying the Economic Value of Snow and Ice Operations Success
- Continued collecting responses for the 2024-2025 Annual Survey of State Winter Maintenance Data.
- Coordinated with the subcommittee and vendors to renew / update / add deicer products to the Qualified Products List.

Research Support

New projects

- Coordinated with MnDOT to post the following RFPs and respond to any questions submitted by investigators.
Coordinated with the Clear Roads TAC to schedule an online meeting to review the proposals received in response to the RFPs on January 15, 2026.
 - Developing a National Road Condition Standard Legend
 - A Benefit-Cost Analysis of Implementing and Operating AVL/GPS Technology Systems
 - Updated Techniques in Clearing Different Interchange Configurations and Other Geometric Layouts
 - Materials and Guidance to Maximize the Value of a Weather Services Contract
 - Snowplow Truck Washing Facility Designs and RFP Templates
 - Comprehensive Guide to Prewetting Application Rates and Methods
 - pH Waiver for Deicing Products on the Qualified Products List

Research in progress

- Continued coordination with the PIs and subcommittees to schedule check-in teleconferences and facilitate the review of deliverables for:
 - Determining the Migration of Chloride-based Deicers through Different Soil Types
 - Development of a Public Service Announcement Library
 - Updating the Impact of Capital Projects Decision Support Tool
 - Using Vegetation Management Practices Near Roads to Leverage the Benefits of Solar Radiation
 - Toxicity Standards for the Qualified Products List
 - Effective Pretreatment for Events Beginning as Rain
 - Salt Management Training for Non-DOT End Users
- Coordinated with the PI and subcommittee to facilitate the review of final deliverables and closeout the following project:
 - Evaluation of Direct Liquid Application of Salt Brine vs Granular Salt as Measured through Various Performance and Safety Metrics
 - Quantifying the Economic Value of Snow and Ice Operations Success

Implementation

- Developed a brief report that captures the implementation opportunities and impacts for each research project.
- Continued to provide access (429 agencies / entities) to the training modules developed by the Clear Roads project, Snowplow Operator and Supervisor Training.
- Provided access (1,582 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.
- Began discussions with AASHTO's Technical Training Solutions committee to partner in the conversion of Clear Roads Snowplow Operator and Supervisory training modules into computer-based training hosted by AASHTO.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Plan and develop materials for the 2026 spring meeting in Lexington, KY.
- Contract with Hilton to host the 2026 fall meeting in Mystic, CT.
- Conduct an online meeting of Clear Roads to review and discuss proposals in response to the 2025 RFPs.
- Coordinate with MnDOT, Clear Roads, and investigators to finalize work plans for 2025 projects for contracting with MnDOT.
- Collect the final responses, analyze, and post the 2024-2025 Annual Survey of State Winter Maintenance Data.
- Complete and publish the following synthesis projects:
 - Snow & Ice, 2030
 - Best Practices for Research Implementation
- Continue work on the following synthesis projects:
 - Predictive Methods to Update Road Condition Reporting
 - Update on the Status of AVL/GPS for Winter Operations
- Work with PIs to finalize the following project including gaining approval of final deliverables, conducting a project closeout webinar and drafting the research brief.
 - Using Vegetation Management Practices Near Roads to Leverage the Benefits of Solar Radiation
- Finalize and post the 2024-2025 Annual Survey of State Winter Maintenance Data.
- Compile and post the winter maintenance-related technical sessions at the 2026 TRB Annual Meeting.
- Identify a topic / journal for the 2026 Feature Article.
- Coordinate with Clear Roads members to facilitate, record, and post an Implementation Webinar proposed during the fall meeting.
- Conduct Research Development Group meetings in January, February, and March.
- 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 provide design and administrative support for the Qualified Products List.
- Continue to conduct project closeout and implementation webinars. Post them on the Clear Roads website.
- Continue to coordinate the completion of project closeout forms.
- Continue to respond to requests for Clear Roads training materials.

STATUS AND COMPLETION DATE:

The contract tasks are progressing as planned. The completion date is June 30, 2026.