

# 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:** April through June 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:**  
\$232,461.58

## WORK COMPLETED:

### TAC Meetings

- Attended and supported the 2024 spring meeting in Annapolis, MD on April 16-18. Prepared the agenda, budget, meeting materials, and minutes and provided them to the TAC.
- Contracted with the Hilton Garden Inn – Kalispell, Montana for the fall 2024 meeting.
- Began reaching out to hotels in Richmond, VA in preparation for the spring 2025 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 continue to facilitate transfers for fiscal year 2024.
- Supported efforts of TAC members, including changes in state representation. The total number of members remains 39.
- Coordinated with Tennessee to have them send a representative to the 2024 fall meeting.

### Information Services

- Used Constant Contact to distribute 7 Clear Roads news posts.
- Coordinated the collection of additional responses for the Clear Roads Equipment Online Database.
- Completed research briefs for the following projects:
  - Standard Test Procedures for Ice Melting Capacity of Deicers
  - Using GIS to Highlight Highway Segments Sensitive to Deicing Materials
  - Calculating Plow Cycle Times from AVL Data
- Facilitated, recorded, and posted an Implementation Webinar on the topic of AWSSI.

### Research Support

#### *New projects*

- Facilitated meetings of the project subcommittees for the following three new FY2024 projects selected during the spring meeting, drafted scopes of work, and submitted as requisition forms to MnDOT for posting as RFPs.
  - Toxicity Standards for the QPL
  - Effective Pretreatment Methods for Events Beginning as Rain
  - Salt Management Training for Non-DOT End Users
- Facilitated scoping meetings with the project subcommittees for the following three new FY2023 synthesis projects selected during the 2023 spring meeting (needed to wait to begin work on these projects until the contract was amended).
  - Synthesis: Management of Video Recordings and Images Taken from Truck-Mounted Cameras
  - Synthesis: Brine-Making Practices
  - Synthesis: UAV Uses for Winter Maintenance

### *Research in progress*

- Continued coordination with the PIs and subcommittees to schedule check-in teleconferences and facilitate the review of deliverables for:
  - Salt Shed Design Template
  - Grip Sensor Technology and Salt Applications
  - Update to CR 13-04: Best Practices for Protecting DOT Equipment from the Corrosion Effect of Chemical Deicers
  - Training Module Development for Evaluation of Storm Severity Index and Winter Severity Index Variables
  - Determining the Migration of Chloride-based Deicers through Different Soil Types
  - Comprehensive Guide to Pre-wetting Application Rates and Methods
  - Best Management Practices for Liquid Chloride Storage and Pumping Systems
  - 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
  - Use of Dashboards for Winter Operations
  - pH Waiver for Deicing Products and the Qualified Products List
  - 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

### *Implementation*

- Developed a brief report that captures the implementation opportunities and impacts for each research project.
- Continued to provide access (363 agencies / entities) to the training modules developed by the Clear Roads project, Snowplow Operator and Supervisor Training.
- Provided access (1,342 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.
- Facilitated and recorded a Clear Roads Research Implementation Webinars focused on AWSSI (Maine). Communicated with Virginia DOT representative for the next webinar on and Indoor Stockpile Monitoring.
- Assisted FHWA and Aurora with coordination of the review of deliverables for their project on Adaptive Route Optimization by Clear Roads TAC.
- Drafted and posted the 2024 Clear Roads Generic PPT, including new projects selected in the spring meeting, for members to use in state or national presentations.

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

- Finalize materials for, and attend / support, the fall meeting in Kalispell, MT.
- Collect proposals from hotel in Richmond, VA, and contract with the selected hotel, for the 2025 spring meeting.
- Provide support to MnDOT in responding to questions related to the 2024 RFPs.
- Coordinate review of the responses to the 2024 RFPs.
- Administer and post the 2023-2024 Product Experience Survey.
- Work with PIs to finalize the following projects including gaining approval of final deliverables, conducting project closeout webinars and drafting research briefs.
  - Updated Best Practices for Protecting DOT Equipment from the Corrosion Effect of Chemical Deicers
  - Training Module Development for Evaluation of Storm Severity Index and Winter Severity Index Variables
  - Effects of Additives in Deicing Salts at Lower Temperatures
- Work with TAC to obtain final responses to the first round of the Clear Roads Equipment Online Database.
- 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.
- Begin drafting the 2024 feature article focused on Standard Test Method for Ice Melting Capacity.

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

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