

## 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:** July through September 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:**  
\$368,182.41

### WORK COMPLETED:

#### TAC Meetings

- Attended and supported the 2024 fall meeting in Kalispell, MT on September 17-19. Prepared agenda, budget, meeting materials, and minutes and provided them to the TAC by posting them on the website. Provided a virtual meeting platform and technology for those attending remotely.
- Contracted with the Delta Hotels Richmond Downtown in Richmond, Virginia for the spring 2025 meeting. Paid a \$900 deposit to the hotel.
- Reached out to hotels in Denver, CO, Minneapolis – St. Paul, MN, and St. Louis, MO for the fall 2025 joint meeting for Clear Roads, Aurora, and AASHTO and presented findings to the TAC during the meeting in Kalispell for a vote.
- Met with Aurora and AASHTO to plan for the National Winter Maintenance Peer Exchange.

#### 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. All transfers for fiscal year 2024 are complete.
- 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 2025 spring meeting.

#### Information Services

- Used Constant Contact to distribute 6 Clear Roads news posts.
- Completed research briefs for the following projects:
  - 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
- Conducted final project webinar for the following projects:
  - 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
- Continued collecting responses for the 2023-2024 Annual Survey of State Winter Maintenance Data.
- Coordinated 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.
- Developed, and obtained review / approval from the executive committee for, a Clear Roads poster for display at the 2025 TRB Annual Meeting.
- Coordinated with editor, drafted, obtained review / approval, submitted an article entitled, Tools to Make Better Winter Maintenance Decisions: Free decision-making resources from Clear Roads help agencies optimize their wintertime operations. Article was published in the APWA Reporter's October 2024 issue.

## Research Support

### *New projects*

- Received proposals for the following three new FY2024 projects. Posted them on the member's only page of the website and coordinated their review.
  - Toxicity Standards for the QPL
  - Effective Pretreatment Methods for Events Beginning as Rain
  - Salt Management Training for Non-DOT End Users
- Scheduled an online meeting of the TAC to provide comments on the proposals submitted in response to the 2024 RFPs.

### *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
  - Determining the Migration of Chloride-based Deicers through Different Soil Types
  - 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
  - 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:
  - 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
- Due to the departure of the PI for another university, coordinated with the subcommittee, MnDOT, and Washington State University to cancel the following projects:
  - Comprehensive Guide to Pre-wetting Application Rates and Methods
  - pH Waiver for Deicing Products and the Qualified Products List

### *Implementation*

- Developed a brief report that captures the implementation opportunities and impacts for each research project.
- Continued to provide access (381 agencies / entities) to the training modules developed by the Clear Roads project, Snowplow Operator and Supervisor Training.
- Provided access (1,405 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.
- Scheduled an Implementation Webinar on the Product Proficiency Sample Program to be conducted on 11/1/2024.

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

- Contract with the St. Paul Hotel to host the fall 2025 joint meeting.
- Coordinate with MnDOT, Clear Roads, and investigators to finalize work plans and budgets for 2024 projects in advance of contracting with MnDOT.
- Collect the final responses, analyze, and post the 2023-2024 Annual Survey of State Winter Maintenance Data.
- 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.
  - Salt Shed Design Template
  - Best Management Practices for Liquid Chloride Storage and Pumping Systems
  - Use of Dashboards for Winter Operations
- 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.
- Schedule the Research Development Group meetings for January.
- 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.