

# 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 2021

**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:**  
\$751,585.27

**PROJECT EXPENDITURES TO DATE:**  
\$618,448.75

## WORK COMPLETED:

### TAC Meetings

- Continued planning for the 2021 spring virtual meeting on April 13-15.
- Facilitated discussions with Sheraton Hotel, their A/V contractor, and MnDOT to extend the contract between MnDOT and the Sheraton Hotel for the fall meeting in September.

### 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 2021.
- Continued work on an improved online deicer product submission form for vendors on the Qualified Products List webpage.
- Supported efforts of TAC members, including changes in state representation. The total number of members remains at 36.

### Information Services

- Used Constant Contact to distribute 11 Clear Roads news posts.
- Compiled a Compendium of winter maintenance-related sessions for the 2021 TRB Annual Meeting.
- Completed work on:
  - Inventory and Use of Salt Spreading Systems
  - Resources, Practices and Needs for Weather Forecasting to Facilitate Winter Road Maintenance
- Continued work on:
  - Clear Roads Snow and Ice Equipment Online Database
- Obtained approval from the editor of the APWA Reporter to publish an article on defensive driving / safe driving modules in the October 2021 issue. Work will continue on this through the next two quarters.
- On behalf of the TAC Chair, submitted an abstract for a paper entitled, *State Annual Winter Maintenance Database Supports Research, Planning, Service, and Policymaking* to the Calgary PIARC 2022 World Winter Service and Road Resilience Congress.
- Began collecting products for use in the Clear Roads Product Experience Survey.

### Research Support

#### *New projects*

- Coordinated with MnDOT, project PIs, and Clear Roads subcommittees to kick off the following FFY2020 projects:
  - Understanding the NaCl Phase Diagram

- Salt Shed Design Template
- AWSSI Enhancements – Phase II
- Coordinated with project champion and subcommittee on a revised scope of work for the project, Evaluation of Indoor Automated Stockpile Measurement Systems. Subcommittee is recommending CTC conduct this project.
- Coordinated the submission of research proposal ideas in advance of the 2021 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:
  - Aftermarket Cameras in Winter Maintenance Vehicles
  - High Performance Blade Evaluation
  - Review and Summary of Pre-wet Methods and Procedures
  - Standard Test Procedures for Ice Melting Capacity of Deicers
  - Expanding Application Rate Guidance for Salt Brine Blends for Direct Liquid Application and Anti-icing
  - Recruitment and Retention of Highway Maintenance Workers
  - Measuring the Efficiencies of Tow Plows and Wing Plows
  - Synthesis of Technical Requirements and Considerations for an Automated Snowplow Route Optimization RFP Template
  - Entry-Level Driver Training for Maintenance Equipment Operators
- Worked with the PI and subcommittee to facilitate review of industry comments regarding the final report and specifications for the project, Standard Specifications for Plow Blades with Carbide Inserts.

*Implementation*

- Developed a brief report that captures the implementation opportunities and impacts for each research project.
- Collected and posted data on an internal TAC survey:
  - Reporting for Emergency Hours (January 2021)
  - Maintenance Management Systems (February 2021)
  - Snow Removal along Bridge Railings and Barrier Walls (March 2021)
  - Deicers and Abrasives – Mixtures and Application Rates (March 2021)
- Continued to provide access (219 agencies / entities) to the training modules developed by the Clear Roads project, Snowplow Operator and Supervisor Training.
- Coordinated with the TAC Chair and TRB committee chair to prepare a presentation at the 2021 TRB Annual Meeting.

**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.
- Coordinate development of scopes of work for 2021 research projects selected as part of the 2021 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.
- Continue to provide support to MnDOT to get the FY2020 projects under contract.
- Continue work on the Clear Roads Snow and Ice Equipment Online Database.
- If accepted, and in coordination with the TAC Chair, draft the paper for 2022 PIARC conference.
- Develop and administer survey for the 2020-2021 Product Experience Survey.
- Send draft dissemination plans for 2020 research projects to subcommittees for their review.
- Continue to update the Clear Roads website with both project and administrative information.
- Assist with the coordinating and tracking funding transfers to the pooled fund TPF-5(353).
- Research, write, and publish winter maintenance news posts.
- Use Constant Contact to distribute the winter maintenance news posts, completed research results, and other information.
- Produce briefs of completed research projects.
- 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 contract completion date is June 30, 2021.