

# 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 2020

**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:**  
\$528,427.31

## WORK COMPLETED:

### TAC Meetings

- Completed the minutes for the 2020 fall face-to-face meeting and posted them on the Clear Roads website.

### 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 2020.
- Updated the Clear Roads Generic Presentation for use by the Clear Roads Chair at the committee meeting of the TRB Standing Committee on Road Weather.
- 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 the Clear Roads news posts pertaining to an updated guidance for the Qualified Products List and recent Clear Roads research.
- Began work on a Compendium of winter maintenance-related sessions for the 2021 TRB Annual Meeting.
- Continued work on:
  - Inventory and Use of Salt Spreading Systems
  - Resources, Practices and Needs for Weather Forecasting to Facilitate Winter Road Maintenance
  - Clear Roads Snow and Ice Equipment Online Database
- Recorded and posted a closeout webinar for the following project:
  - Integrating Advanced Technologies into Winter Operations Decisions
  - Evaluation of SSI and WSI Variables
- Completed and posted the 2019-2020 Annual Survey of State Winter Maintenance Data

## Research Support

### *New projects*

- Coordinated with MnDOT, project PIs and Clear Roads subcommittees to finalize work plans and budgets in order to get the FY2020 projects below under contract.
  - Understanding the NaCl Phase Diagram
  - Expanded Use of AVL/GPS Technology
  - Using GIS to Highlight Highway Segments Sensitive to Deicing Materials
  - Salt Shed Design Template
  - AWSSI Enhancements – Phase II
- Received no proposals in response to an RFP for the following project. Directed CTC to submit a proposal for a scaled down version of this project instead.
  - Evaluation of Indoor Automated Stockpile Measurement Systems

### *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 final deliverables and close out the following project:
  - Integrating Advanced Technologies into Winter Operations Decisions
  - Evaluation of SSI and WSI Variables

### *Implementation*

- Developed a brief report that captures the implementation opportunities and impacts for each research project.
- Continued to monitor data regarding Clear Roads website traffic, YouTube hits, coordinate Project Closeout Forms and Research Use Surveys.
- Collected and posted data on an internal TAC survey:
  - Stockpile Reporting Systems (November 2020)
  - Overweight Permitting for Snow Plows (November 2020)
  - Reported Roadway Conditions (December 2020)
- Continued to provide access (210 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:**

- Develop materials and plan for the 2021 spring meeting. This meeting may be virtual or in-person in Madison, WI.
- Continue to provide support to MnDOT to get the FY2020 projects under contract.
- Complete the following synthesis projects:
  - Inventory and Use of Salt Spreading Systems
  - Resources, Practices and Needs for Weather Forecasting to Facilitate Winter Road Maintenance
- Send draft dissemination plans for 2020 research projects to subcommittees for their review.
- Continue to develop the Clear Roads Snow and Ice Equipment Online Database.
- 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.
- Compile and post on the website the winter maintenance-related technical sessions at the 2021 TRB Annual Meeting.
- 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.