

## 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 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:**  
\$454,012.66

### WORK COMPLETED:

#### TAC Meetings

- Attended and supported the 2020 spring online meeting on April 21-22. Prepared agenda, budget, meeting materials, and minutes and provided them to the TAC.
- Continued to participate as part of the planning committee for the 2020 International Road Weather and Winter Maintenance Conference & Peer Exchange. Due to COVID-19, it has been decided that the Clear Roads fall meeting will take place online and independent of the other consortium groups. Thus the 2020 International Road weather and Winter Maintenance Conference & Peer Exchange has been cancelled. The TRB mid-year meetings of the Winter Maintenance Committee and Road Weather Committee will take place separately in the fall of 2020 and the National Winter Maintenance Peer Exchange will be postponed until the fall of 2021.

#### 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 to include the 2020 projects along with other updates and re-posted it on the members only portion of the site for use by membership, including presentation at the AASHTO Maintenance Committee meeting in July.
- Continued work on an improved online deicer product submission form for vendors on the Qualified Products List webpage
- Published three news posts.
- 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 winter maintenance at the 2020 TRB annual meeting, recent winter maintenance research, recent SICOP Talks Winter Ops podcasts, and 2020 research projects.
- Continued work on:
  - Synthesis of Practice: Mechanic/Operator Training and Training Needs for Winter Maintenance Equipment
  - Inventory and Use of Salt Spreading Systems
  - Resources, Practices and Needs for Weather Forecasting to Facilitate Winter Road Maintenance

- Subject-based Webpages, Phase 3.
- Recorded and posted a closeout webinar for the following project:
  - Alternative Methods for Deicing

## **Research Support**

### *New projects*

- Facilitated meetings of the project subcommittees for the following six new FY2020 projects selected during the spring meeting and drafted scopes for subcommittee and TAC review prior to submitting to MnDOT to be posted as RFPs:
  - Entry-Level Driver Training for Maintenance Equipment Operators
  - Understanding the NaCl Phase Diagram
  - Evaluation of Indoor Automated Stockpile Measurement Systems
  - Expanded Use of AVL/GPS Technology
  - Using GIS to Highlight Highway Segments Sensitive to Deicing Materials
  - Salt Shed Design Template

### *Research in progress*

- Continued coordination with the PIs and subcommittees to schedule check-in teleconferences and facilitate the review of deliverables for:
  - Integrating Advanced Technologies into Winter Operations Decisions
  - Aftermarket Cameras in Winter Maintenance Vehicles
  - High Performance Blade Evaluation
  - Evaluation of SSI and WSI Variables
  - 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
- Worked with the PI and subcommittee to facilitate review of final deliverables and close out the following project:
  - Standard Specifications for Plow Blades with Carbide Inserts
  - Alternative Methods for Deicing
  - Defensive Driving for Snowplow Operators

### *Implementation*

- Developed a brief report requested by MnDOT that captures the implementation opportunities and impacts for each Clear Roads 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:
  - Electronic Driver Vehicle Inspection Reports
  - Face Coverings for Maintenance Staff
- Continued to provide access (180 agencies / entities) to the training modules developed by the Clear Roads project, Snowplow Operator and Supervisor Training.
- Developed a draft template for a Project Dissemination Plan that will be used for all new and in-progress research.

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

- Finalize materials for, and attend / support, the fall online meeting.
- Provide support as necessary to MnDOT as they RFPs for the 2020 projects are posted. Coordinate TAC review of the proposals submitted in response to those RFPs.
- Complete the following synthesis projects:
  - Synthesis of Practice: Mechanic/Operator Training and Training Needs for Winter Maintenance Equipment
  - Inventory and Use of Salt Spreading Systems
  - Resources, Practices and Needs for Weather Forecasting to Facilitate Winter Road Maintenance
  - Subject-based Webpages, Phase 3
- Send draft dissemination plans for 2020 research projects to subcommittees for their review.
- Collect products / create and disseminate survey for 2019-2020 Product Experience Survey.
- Work with the project subcommittee to scope the CTC effort, 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 at a rate of about one every two weeks.
- 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.