

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 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

- Attended and supported the 2020 fall online meeting on September 30 – October 1. Prepared agenda, budget, meeting materials, and minutes and provided them to the TAC.

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.
- Reconfigured manner in which research and synthesis projects can be searched by including an All Research and Synthesis Projects sortable table and posting it within the Research Projects dropdown menu on the navigation bar.
- Continued work on an improved online deicer product submission form for vendors on the Qualified Products List webpage.
- Published four 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 recent winter maintenance research, 2020 Clear Roads research projects, SICOP Talks Winter Ops, postponement of the National Winter Maintenance Peer Exchange, and an updated guidance for the Qualified Products List.
- 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
- Completed work on:
 - Synthesis of Practice: Mechanic/Operator Training and Training Needs for Winter Maintenance Equipment
 - Subject-based Webpages, Phase 3.
- Recorded and posted a closeout webinar for the following project:
 - Defensive Driving for Snowplow Operators

Research Support

New projects

- Received proposals for the following five FY2020 projects. Posted them on the members-only portion of the website.
 - Entry-Level Driver Training for Maintenance Equipment Operators
 - 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
- Posted an RFP for the following FY2020 research project. Proposals due 10/28/2020.
 - 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:
 - 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

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:
 - Winter Driver Training during COVID.
- Continued to provide access (200 agencies / entities) to the training modules developed by the Clear Roads project, Snowplow Operator and Supervisor Training.

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 the RFPs for the 2020 projects are posted. Coordinate TAC review of the proposals submitted in response to those RFPs.
- 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 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.