

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 2018

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:
\$365,487.00

PROJECT EXPENDITURES TO DATE:
\$102,684.81

WORK COMPLETED:

TAC Meetings

- Completed the minutes for the 2018 fall face-to-face meeting and posted them on the Clear Roads website.
- Commenced planning for the 2019 spring face-to-face meeting, which will be held in Indianapolis, IN, April 16 to 18. Drafted and sent out the agenda for spring meeting to TAC membership, so they can obtain travel approval. Spring 2019 was initially planned for Reno, NV but hotel arrangements did not work out.

Administration and Marketing

- Created a poster and handout for presentation at the 2019 TRB Annual Meeting.
- 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 years 2018 and 2019.
- Supported efforts of TAC members, including changes in state representation. The total number of members remains at 36.

Information Services

- Researched and wrote content for the November Winter Maintenance E-Newsletter.
- Used Constant Contact to distribute the Winter Maintenance E-Newsletter and completed synthesis projects.
- Completed and posted the results of the 2018 Clear Roads Research Implementation Survey.
- Commenced work on the 2017 synthesis projects.
 - Clear Roads Subject-based Web Pages, Phase 2.
- Continued work on the following projects.
 - Development of a Winter Preparedness Microsite, and
 - Use of Pre-wetted Solid Materials for Roadway Anti-icing
- Completed work on the following projects...
 - Year 4 of the Annual Survey of State Winter Maintenance Data (2017-2018). The survey results and interactive map were posted on the Clear Roads website,
 - Use of Pre-wetted Materials for Roadway Anti-icing, and
 - Effective Snow and Ice Personnel and Equipment Management for Storm Activation.
- Recorded and posted closeout webinar and completed the report brief for the following project:
 - Developing a Training Video and Manual for Best Practices and Techniques in Clearing Different Interchange Configurations and Other Geometric Layouts.

Research Support

New projects

- Commenced coordination with the project PIs and the subcommittees to finalize and submit to MnDOT revised versions of the work plans and budgets for three new FY2018 projects.
 - Defensive Driving Training for Snowplow Operators,
 - Performance and Cost Effectiveness of High Performance Snowplow Blades,
 - Evaluation of Storm Severity Indexes and Winter Severity Indexes and the Most Reliable Variables for Those Indexes,
 - Review and Summary of Pre-Wet Methods and Procedures, and
 - Alternative Materials and Methods for Snow and Ice Control.
- Coordinated with the TAC, who decided to cancel the RFP on the project, Specifications for Snowplow Route Optimization. Project will be re-scoped and proposed for re-funding at the 2019 spring meeting.
- Coordinated with the TAC, who decided to cancel the RFP on the project, Mechanic/Operator Training for Upkeep of Winter Maintenance Equipment. Project will be re-scoped as a synthesis to be conducted by CTC.

Research in progress

- Continued coordination with the PI and subcommittee to schedule check-in teleconferences and facilitate the review of deliverables for:
 - Developing a Test Bed Software to Qualify Plug and Play Technology
 - Synthesis of Material Application Methodologies for Winter Operations
 - AWSSI Enhancements in Support of Winter Road Maintenance
 - Standards and Guidance for Using Mobile Sensor Technology to Assess Winter Roads Conditions
 - Weather Event Reconstruction and Analysis Tool
 - Integrating Advanced Technologies into Winter Operations Decisions
 - Standard Specifications for Plow Blades with Carbide Inserts
 - Aftermarket Cameras in Winter Maintenance Vehicles
- Worked with the PI and subcommittee to facilitate review of final deliverables and close out the following projects:
 - Developing a Training Video and Manual for Best Practices and Techniques in Clearing Different Interchange Configurations and Other Geometric Layouts

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, and Research Use Surveys.
- Conducted the 2018 Clear Roads Research Implementation Survey and posted the results on the website.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Develop materials and continue planning for the spring face-to-face meeting in Indianapolis, IN.
- Kickoff the synthesis project, Mechanic/Operator Training for Upkeep of Winter Maintenance Equipment.
- Complete the following synthesis projects:
 - Use of Solid Materials for Roadway Anti-icing.
- Kick off the following Clear Roads projects:
 - Defensive Driving Training for Snowplow Operators,
 - Performance and Cost Effectiveness of High Performance Snowplow Blades,
 - Evaluation of Storm Severity Indexes and Winter Severity Indexes and the Most Reliable Variables for Those Indexes,
 - Review and Summary of Pre-Wet Methods and Procedures, and
 - Alternative Materials and Methods for Snow and Ice Control.
- Completed the following Clear Roads projects:
 - Synthesis of Material Application Methodologies for Winter Operations,
 - AWSSI Enhancements in Support of Winter Road Maintenance, and
 - Standards and Guidance for Using Mobile Sensor Technology to Assess Winter Roads Conditions.
- 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 the February Winter Maintenance E-Newsletter.
- Use Constant Contact to distribute the Winter Maintenance Newsletter, completed research results, and other information.
- Solicit equipment to be tested for, and commence, the 2018-2019 Product Experience Survey.
- Produce briefs of completed research projects.
- Compile a list of papers related to winter maintenance from the 2019 TRB Annual Meeting and post on the website.
- 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, 2020.