

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 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:
\$365,487.000

PROJECT EXPENDITURES TO DATE:
\$54,249.60

WORK COMPLETED:

TAC Meetings

- Attended and supported the 2018 fall face-to-face meeting, which was held at the Sheraton West Des Moines in Des Moines, IA on September 10-12. Completed: preparing meeting materials, travel coordination and logistics communications, assistance with facilitation, and expense reimbursement coordination.
- Commenced the planning for the 2019 spring meeting, which will likely take place in Reno, NV, April 16-18, 2019. Back up to Reno is Indianapolis, IN.

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 2018.
- Supported efforts of all TAC members, including tracking state representation. Clear Roads remains at 36 members.

Information Services

- Researched and wrote content for the August Winter Maintenance E-Newsletter.
- Used Constant Contact to distribute the Winter Maintenance Newsletter and a link to recently completed research projects.
- Completed compiling the results and posted the 2017-2018 Product Experience Survey.
- Continued work on the following synthesis projects:
 - Use of Prewetted Solid Materials for Roadway Anti-icing
 - Effective Snow and Ice Personnel and Equipment Management for Storm Activation
 - Development of a Winter Preparedness Microsite
- Commenced work on the following synthesis projects:
 - Annual Survey of State Winter Maintenance Data (2017-2018)
- Completed the following synthesis project:
 - Accuracy of Salt Application Equipment
- Completed a two-page brief for the following project:
 - Emergency Operations Methodology for Extreme Winter Storm Events

Research Support

New projects

- Received proposals for the following six research projects. Posted them on the members-only portion of the Clear Roads website. Discussed the proposals at the fall meeting.
 - 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
- Specifications for Automated Snowplow Route Optimization
- Alternative Materials and Methods for Snow and Ice Control
- Continued to assist Clear Roads with scoping the project, Standard Test Procedure for Ice Melting Capacity of Winter Maintenance Materials.

Research in progress

- Continued coordination with the PIs and subcommittees to coordinate check-in teleconferences and facilitate the review of deliverables for:
 - Developing a Test Bed Software to Qualify Plug and Play Technology
 - Developing a Training Video and Manual for Best Practices and Techniques in Clearing Different Interchange Configurations and Other Geometric Layouts
 - 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 project:
 - Utilization of AVL/GPS Technology: Case Studies

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.
- Initiated and collected responses from TAC members on the 2018 Clear Roads Research Implementation Survey.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Commence the development of materials and logistic details for the Spring Meeting in Reno, NV on April 16-18, 2019
- Scope and commence work on the following synthesis projects:
 - Subject-based Webpages, Phase 2
 - Mechanic/Operator Training for Upkeep of Winter Maintenance Equipment
- Complete the following synthesis projects.
 - Use of Prewetted Solid Materials for Roadway Anti-icing
 - Effective Snow and Ice Personnel and Equipment Management for Storm Activation
 - Annual Survey of State Winter Maintenance Data (2017-2018)
- Continue work on the synthesis project entitled, Development of a Winter Preparedness Microsite.
- Coordinate the finalization of work plans and budgets for FY2018 research projects.
- 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 November Winter Maintenance E-Newsletter.
- Use Constant Contact to distribute the Winter Maintenance Newsletter, completed research results, and other information.
- Assist MnDOT with the bid process for the 2019 Spring Meeting in Reno, Nevada.
- Write a feature article, likely based on the project, Training Video for the Implementation of Liquid Only Plow Routes.
- Coordinate with James Bryant, TRB Senior Program Officer, to conduct a maintenance-focused poster session at TRB.
- 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, 2020.