

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 2017

PARTICIPATING AGENCIES: Minnesota Department of Transportation

PROJECT MANAGER: Tom Peters

SP&R PROJECT NO:
02337

PROJECT IS:

LEAD AGENCY: MnDOT

Planning
 Research &
Development

PRINCIPAL INVESTIGATOR:
CTC & Associates LLC

PROJECT BUDGET:
\$743,730.00

PROJECT EXPENDITURES TO DATE:
\$604,917.31

WORK COMPLETED:

TAC Meetings

- Attended and supported the 2017 fall face-to-face meeting and National Winter Maintenance Peer Exchange, which was held at the Double Tree Hotel in downtown Pittsburgh, PA on September 11-14. Completed: preparing meeting materials, travel coordination and logistics communications, assistance with facilitation, meeting minutes, and expense reimbursement coordination.
- Commenced the planning for the 2018 spring meeting, which will take place in Phoenix, Arizona the week of April 23, 2018.

Administration and Marketing

- Commenced an update of the Clear Roads Operating Procedures and acquired feedback from the TAC at the fall 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 2017.
- Supported efforts of all TAC members, including shifting state representation. Clear Roads remains at 35 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 the RFPs for four new research projects.
- Distributed the 2016-2017 Product Experience Survey and organized the survey responses.
- Continued work on the synthesis project entitled, Clear Roads Maintenance Vehicle Conspicuity.
- Commenced work on the following synthesis projects:
 - Annual Survey of State Winter Maintenance Data (2016-2017)
- Developed scope of work and budget on the following synthesis projects:
 - Accuracy of Salt Application Equipment
 - Website Search Function/Website Re-Organization
- Completed two-page briefs for the following projects:
 - Snow Removal Performance Metrics
 - Snowplow Operator and Supervisor Training

Research Support

New projects

- Received proposals for the four following research projects. Posted them on the members-only portion of the Clear Roads

website. Started to schedule a virtual meeting to discuss the proposals.

- A Comprehensive Guide to Pre-Wetting
- Integrating Advanced Technologies into Winter Operations Decisions
- Standard Specification for Plow Blades with Carbide Inserts
- Aftermarket Cameras in Winter Maintenance Vehicles
- Continued to coordinate with MnDOT on the contracting of the following projects:
 - Test Bed Software project. Contract was sent to Parsons for review and signature.
 - AWSSI Enhancements in Support of Winter Road Maintenance (FY16 project that was intended to contribute to an Aurora current project. The Aurora project fell through and has since been re-scoped)

Research in progress

- Continued coordination with the PIs and subcommittees to coordinate check-in teleconferences and facilitate the review of deliverables for:
 - Understanding the Chemical and Mechanical Performance of Snow and Ice Control Agents on Porous or Permeable Pavements
 - Quantifying the Impact that New Capital Projects Will Have on Roadway Snow and Ice Control Operations
 - 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
 - Identification and Recommendations for Correction of Equipment Factors Causing Fatigue in Snowplow Operators
 - Utilization of AVL/GPS Technology: Case Studies
 - Standards and Guidance for Using Mobile Sensor Technology to Assess Winter Roads Conditions
 - Emergency Operations Methodology for Extreme Winter Storm Events
 - Weather Event Reconstruction and Analysis Tool
 - Training Video for the Implementation of Liquid-Only Plow Routes

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.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Commence the development of materials and logistic details for the Spring Meeting in Phoenix, AZ on April 24-26, 2018
- Scope and commence work on the following synthesis projects:
 - Use of Prewetted Solid Materials for Roadway Anti-icing
 - Effective Snow and Ice Personnel and Equipment for Storm Activation
- Kickoff the following synthesis projects:
 - Accuracy of Salt Application Equipment
 - Website Search Function/Website Re-Organization
- Complete the following synthesis projects.
 - Clear Roads Maintenance Vehicle Conspicuity
 - Annual Survey of State Winter Maintenance Data (2016-2017)
- Kick off the following projects:
 - Developing Test Bed Software to Qualify Plug and Play Technology
 - AWSSI Enhancements in Support of Winter Road Maintenance
- Conduct virtual meeting of the TAC to discuss the proposals received in response to the FY17 research projects.
- Coordinate the finalization of work plans and budgets for FY2017 research projects.
- Complete the update to Clear Roads Operating Procedures based on the feedback received at the fall meeting.
- Post the 2016-2017 Product Experience Survey results on the Clear Roads website.
- 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 2018 Spring Meeting in Phoenix, Arizona.
- Write feature article based on the project, Snowplow Operator and Supervisor Training.
- 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 third of the three allowed amendments has been approved. The current contract completion date is July 7, 2018.