

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 2018

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:
\$768,658.00

PROJECT EXPENDITURES TO DATE:
\$746,863.97 (through July 7, 2018 – end of contract)

WORK COMPLETED:

TAC Meetings

- Attended and supported the 2018 spring face-to-face meeting, which was held at the Crowne Plaza Phoenix Airport in Phoenix, Arizona on April 24-26. Prepared meeting materials, coordinated travel and logistics communications, assisted with meeting facilitation, meeting minutes, and coordination of expense reimbursement.
- Continued to assist with the planning efforts for the 2018 Clear Roads fall meeting, which will take place in Des Moines, Iowa on September 10-12, 2018.
- Scheduled the spring 2019 meeting for April 23-25, 2019. The meeting will take place in Reno, Nevada.

Administration and Marketing

- Coordinated the preparation of materials to be presented/displayed at the bi-annual Pacific Northwest Snowfighters conference in Spokane, WA.
- Updated the Clear Roads generic PowerPoint presentation for use by membership, specifically at the AASHTO Maintenance Committee meeting in Charlotte, NC at the end of July.
- 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 TAC members, including shifting state representation and recruiting new members. Total membership remains at 36.

Information Services

- Researched and wrote content for the May Winter Maintenance E-Newsletter.
- Used Constant Contact to distribute the Winter Maintenance Newsletter, news about a new research project, and a new searchable format for the Clear Roads website.
- Finalized the list of products to be tested for the 2017-2018 Product Experience Survey.
- Continued work on the following synthesis projects:
 - Accuracy of Salt Application Equipment,
 - Use of Solid Materials for Roadway Anti-icing,
 - Effective Practices for Activating Snow and Ice Personnel and Equipment for Winter Storms, and
 - Winter Preparedness Microsite.
- Completed the synthesis project entitled, Clear Roads Subject-based Webs Pages.
- Worked on a two-page brief for the following projects:
 - Emergency Operations Methodology for Extreme Winter Storm Events, and
 - Training Video for the Implementation of Liquid-Only Plow Routes.

- Researched and wrote literature searches for new research projects in advance of the RFP scoping meetings.

Research Support

New projects

- Facilitated meetings of the project subcommittees for the following eight new FY2018 projects selected during the spring meeting and drafted scopes for subcommittee and TAC review prior to submitting to MnDOT to be posted as Request for Proposals.
 - Mechanic/Operator Training for Upkeep of Winter Maintenance Equipment,
 - Standard Test Procedure for Ice Melting Capacity of Winter Maintenance Materials,
 - 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,
 - Pre-wetting of Solid Deicing Materials for Winter Highway Maintenance—Phase I,
 - Specifications for Automated Snowplow Route Optimization, and
 - Alternative Materials and Methods for Snow and Ice Control.
- The following new synthesis projects were selected during the spring meeting.
 - Clear Roads Subject-based Webpages, Phase 2, and
 - Annual Survey of State Winter Maintenance Data (2017-2018)
- Coordinated with the project subcommittees and MnDOT to establish contracts with the selected vendor for the following projects:
 - AWSSI Enhancements in Support of Winter Road Maintenance, and
 - Aftermarket Cameras in Winter Maintenance Vehicles.

Research in progress

- Continued coordination with the PI and subcommittee 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,
 - Utilization of AVL/GPS Technology: Case Studies,
 - Standards and Guidance for Using Mobile Sensor Technology to Assess Winter Roads Conditions,
 - Weather Event Reconstruction and Analysis Tool.
- Worked with the PI and subcommittee to facilitate review of final deliverables and close out the following projects:
 - Understanding the Chemical and Mechanical Performance of Snow and Ice Control Agents on Porous or Permeable Pavements
 - Emergency Operations Methodology for Extreme Winter Storm Events
 - 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.
- Created a Clear Roads Implementation Survey for all completed projects to date and sent it to the TAC for their response.
- Coordinated the access of over 50 non-DOT entities to the training modules developed by the Clear Roads project, Snowplow Operator and Supervisor Training.
- Collected and posted data on three internal TAC surveys:
 - Route Optimization,
 - Dyed Road Salt, and
 - Salt Ordering Systems.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Finalize materials and logistical planning for the fall meeting at the Sheraton West Des Moines in Des Moines, IA on September 10-12, 2018. Attend and support the meeting, draft meeting minutes.
- Provide support as necessary to MnDOT as the RFPs for the 2018 projects are posted and coordinate the TAC review of the proposals submitted in response to those RFPs.
- Kickoff and conduct the synthesis projects selected at the spring meeting.
- Complete the following synthesis projects.
 - Accuracy of Salt Application Equipment,
 - Use of Solid Materials for Roadway Anti-icing,
 - Effective Practices for Activating Snow and Ice Personnel and Equipment for Winter Storms, and
 - Winter Preparedness Microsite.
- Kick off the project, Integrating Advanced Technologies into Winter Operations Decisions
- 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 August Winter Maintenance E-Newsletter.
- Use Constant Contact to distribute the Winter Maintenance Newsletter, completed research results, and other information.
- Collect responses on the 2017-2018 Product Experience Survey.
- Assist MnDOT with the bid process for the 2019 Spring Meeting in Reno, Nevada.
- Write feature article, likely based on the project, Training Video for the Implementation of Liquid-Only Plow Routes.
- 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 - which this progress report is based on - is due to expire July 7, 2018.