

# 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 2019

**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:**  
\$232,918

## WORK COMPLETED:

### TAC Meetings

- Attended and supported the 2019 spring face-to-face meeting in Indianapolis, IN. April 16-18. Prepared meeting materials, coordinated travel and logistics communications, assisted with meeting facilitation, meeting minutes, and coordination of expense reimbursement.
- Continued planning for the 2019 fall face-to-face meeting, which will be held in Burlington, VT on September 24-26. Provided MnDOT with hotel needs and attendees in order to award a contract to the Double Tree in Burlington. Drafted an agenda and provided it to the TAC membership so that they could begin obtaining travel authorization.
- Continued to participate as part of the planning committee for the 2020 International Road weather and Winter Maintenance Conference & Peer Exchange, which will be held in September 2020.

### Administration and Marketing

- Prepared a poster for presentation at the 2019 AASHTO RAC Annual Meeting in Santa Fe, NM in July.
- Communicated with the National Local Technical Assistance Program about Clear Roads presenting at the 2019 National LTAP-TTAP-NTTD Conference in partnership with the National Transportation Training Directors. This conference will take place in August in Stowe, VT.
- 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 2019.
- Coordinated a transition from traditional quarterly newsletters to more frequent, single post news items. This included re-configuring the website to accommodate this new format.
- Updated the Clear Roads Generic Presentation to include the 2019 projects along with other updates and re-posted it on the members only portion of the site for use by membership, specifically at the AASHTO Maintenance Committee meeting in July.
- Completed the Clear Roads Winter Preparedness Microsite and made it live.
- 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 National Winter Maintenance Survey Data, 2019 research projects, and the transition of the QPL from PNS to Clear Roads.

- Finalized the list of products to be tested for the 2017-2018 Product Experience Survey.
- Finalized the scope of work and kicked off the Synthesis of Practice: Mechanic/Operator Training and Training Needs for Winter Maintenance Equipment
- Continued work on the following synthesis projects:
  - Development of a Winter Preparedness Microsite
  - Subject-based Webpages, Phase 2
- Recorded and posted closeout webinars for the following project:
  - Standards and Guidance for Using Mobile Sensor Technology to Assess Winter Road Conditions

## **Research Support**

### *New projects*

- Facilitated meetings of the project subcommittees for the following five new FY2019 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.
  - Expanding Brine Recipes and Their Use
  - Synthesis: Retention and Recruitment of Highway Maintenance Workers
  - Comparison of Performance of Prewet Road Salt Distributed by Traditional Chain Conveyor Spreader Versus Auger-driven Slurry Spreader
  - Measuring the Efficiencies of Tow / Wing Plows
  - Specifications for Automated Snowplow Route Optimization
- Coordinated with the project subcommittees and MnDOT to establish a contract with the selected vendors for the following FY2018 projects:
  - High Performance Blade Evaluation
  - Evaluation of SSI and WSI Variables
  - Review and Summary of Pre-wet Methods and Procedures

### *Research in progress*

- Continued coordination with the PI and subcommittee to schedule check-in teleconferences and facilitate the review of deliverables for:
  - 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
  - Defensive Driving for Snowplow Operators
  - High Performance Blade Evaluation
  - Evaluation of SSI and WSI Variables
  - Review and Summary of Pre-wet Methods and Procedures
  - Alternative Methods for Deicing
- Worked with the PI and subcommittee to facilitate review of final deliverables and close out the following project:
  - Developing a Test Bed Software to Qualify Plug and Play Technology
  - Synthesis of Material Application Methodologies for Winter Operations
  - Standards and Guidance for Using Mobile Sensor Technology to Assess Winter Roads Conditions

### *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 four internal TAC surveys:
  - Use of Tri-Axles
  - Snowplow Tracking Using Operator ID
  - Sidewalk and Bike Path Snow Removal
  - DLA Nozzles
- Continued to coordinate the access of over 100 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 and logistical planning for the fall meeting in Burlington, VT in September 2019. Attend and support the meeting, draft meeting minutes.
- Provide support as necessary to MnDOT as the RFPs for the 2019 projects are posted and coordinate the TAC review of the proposals submitted in response to those RFPs.
- Continued to plan for the Clear Roads 2019 fall meeting and the 2020 International Road weather and Winter Maintenance Conference & Peer Exchange.
- Complete the following synthesis projects.
  - Development of a Winter Preparedness Microsite
  - Subject-based Webpages, Phase 2

- Continue work on the synthesis project, Mechanic/Operator Training for Upkeep of Winter Maintenance Equipment.
- Kickoff the following synthesis projects.
  - Inventory and Use of Salt Spreading Systems
  - Benefits of Hiring a Meteorologist
- 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 single story 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.
- Create and administer the 2018-2019 Product Experience Survey.
- Assist MnDOT with the bid process for the 2020 spring meeting in Madison, WI.
- Write a feature article on recent Clear Roads training-based projects.
- 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.