

State Planning and Research Program Quarterly Report

PROJECT TITLE: 2013-2015 Clear Roads Administration 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: January through March 2016

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:
\$448,490.00

PROJECT EXPENDITURES TO DATE:
\$371,426.63

WORK COMPLETED:

TAC Meetings

- Continued planning for the 2016 spring face-to-face meeting, which will be held in Warwick, Rhode Island at the Radisson Hotel Providence Airport on April 12-14th. Coordinated with MnDOT and the hotel to make final meeting room and catering arrangements. Completed and sent the final agenda and the research and synthesis problem statements to the TAC membership.
- Commenced the planning efforts for the 2016 fall meeting, which will be held in Omaha, NE. Sent the list of potential bidders to MnDOT to allow for the release of the Request for Bidders.

Administration and Marketing

- Updated the Clear Roads website with current project status, project deliverables, 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.
- Supported efforts of all TAC members. Assisted in the coordination of replacing state representation for the following states: California, Montana, and New Hampshire. Total number of member states is still 33.

Information Services

- Created a handout and updated presentation on Clear Roads for use at the 2016 TRB Annual Meeting.
- Researched and wrote content for the February Winter Maintenance E-Newsletter.
- Prepared and disseminated Papers Related to Winter Maintenance from the 2016 TRB Annual Meeting.
- Used Constant Contact to distribute the Winter Maintenance Newsletter, completed research results, and an overview of winter maintenance papers presented at TRB.
- Produced two-page briefs for the following projects:
 - Understanding the Effectiveness of Non-Chloride Liquid Agricultural By-Products and Solid Complex Chloride/Mineral Products
 - Roadway Salt Management Best Management Practices

- Completed revisions to the survey for the Winter Data Statistics project and surveyed both the Clear Roads TAC and winter maintenance managers nationally. Assembled and organized the survey data received and developed an interactive map to present the results.
- Product Experience Survey: Completed the collection of products to be evaluated for the 2015-2016 winter season.

Research Support

New projects

- Completed the call for research and synthesis problem statements in advance of the spring meeting.
- Developing Testbed Software to Qualify Plug and Play Technology
 - Due to higher cost, MnDOT and MnIT are gaining necessary approvals and coordinating efforts to assign a project management team for this project.
- Synthesis of Material Application Methodologies for Winter Operations
 - Final stages of contract negotiations.
- Identification and Recommendations for Correction of Equipment Factors Causing Fatigue in Snowplow Operators
 - Final stages of contract negotiations.

Research in progress

- Continued coordination with the PI and subcommittee to schedule 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
 - Snowplow Operator and Supervisor Training
 - Synthesis on GPS/AVL Equipment Used for Winter Maintenance
 - 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
 - Plug and Play, Phase 2
 - Snow Removal Performance Metrics
 - Identifying Best Practices for Snowplow Route Optimization
 - North American Study on Contracting Snow and Ice Response

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 and YouTube hits. Will report findings at the spring meeting.
- Coordinated the completion of post-project close out forms for the following projects. Will report the results of the process to the TAC as the spring meeting. Developed ideas for what to do with the completed forms.
 - Understanding the Effectiveness of Non-Chloride Liquid Agricultural By-Products and Solid Complex Chloride/Mineral Products
 - Benefit-Cost of Various Winter Maintenance Strategies
 - Best Practices for the Prevention of Corrosion to DOT Equipment: A User's Manual
 - Roadway Salt Best Management Practices
- Coordinated the completion of research use surveys for the following projects. Will report the results of the surveys to the TAC at the spring meeting. Developed ideas for how to use the responses.
 - Understanding the True Costs of Snow and Ice Control
 - Developing a Totally Automated Spreading System
 - Environmental Factors Causing Fatigue in Snowplow Operators

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Finalize materials and logistics for the Spring Meeting at the Radisson Hotel in Warwick, RI on April 12-14, 2016. Attend and support the meeting, draft meeting minutes.
- Complete literatures searches and assist the TAC in developing scopes of work for the new projects selected for funding at the spring meeting.
- Coordinate and support the RFP development and posting process for the new projects.
- Finalize the Winter Data Statistics survey results for the 2015-2015 winter and post them on the website. Begin conducting the survey for the 2015-2016 winter.
- Kick off and conduct the synthesis projects selected at the spring meeting.
- Work with the TAC members and MnDOT staff to develop a new proposal to FHWA for the next phase of Clear Roads (under a new TPF#).
- Kick off remaining two FY2015 projects and Clear Roads Test Bed Software project once the contracts are in place.
- 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(218).
- Research, write, and publish the May Winter Maintenance E-News.
- Conduct the 2015-2016 Product Experience Survey.
- Once hotel is selected, begin logistical planning for the 2016 Fall Meeting in Omaha, Nebraska.
- Begin preparations for the 2017 Spring Meeting, including coordinating with MnDOT on the hotel bid process.
- 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 August 31, 2016.