

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: April through June 2015

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:
\$386,056.00

PROJECT EXPENDITURES TO DATE:
\$269,270.21

WORK COMPLETED:

TAC Meetings

- Commenced planning for the fall face-to-face meeting of the Clear Roads Technical Advisory Committee. That meeting will occur September 21-22, 2015, in Bloomington, MN. Planning has included all preparations for the meeting such as communication with TAC members, meeting logistics, and agenda.
- Coordinated with members of AASHTO and Aurora to support planning for the 2015 Winter Maintenance Peer Exchange. The Peer Exchange will take place after the Clear Roads fall meeting at the same venue on Sept. 23-25.

Administration and Marketing

- Updated the Clear Roads website with current TAC members, contact information, project status, project deliverables, meeting information, and webinars.
- Maintained and updated commitments, transfers, and overall budget information for the pooled fund in coordination with MnDOT.
- Supported efforts of TAC members in recruiting new members, resulting in the addition of Alaska as a member state. (Note that Delaware began working on their transfer of funds to Clear Roads in July 2015.)

Information Services

- Researched and wrote content for the May Winter Maintenance E-Newsletter.
- Redesigned the Clear Roads Constant Contact email format to match the design of the website and be more user friendly. Distributed the Clear Roads newsletter using the new format.
- Began drafting an article for *Roads & Bridges* magazine on the project Snow and Ice Environmental Best Management Practices.
- Produced a two-page brief for the project Best Practices for the Prevention of Corrosion on DOT Equipment.
- Completed literature searches for the three new FY2015 Clear Roads projects on snow and ice contracting, equipment and fatigue, and material application.
- Recorded and posted the closeout webinar for the project on deicer toxicity.

Research Support

New projects

- Facilitated meetings of the project subcommittees for the following three new FY2015 projects to develop scopes of work for inclusion in MnDOT Requests for Proposals:
 - Synthesis of Material Application Methodologies for Winter Operations
 - Identification and Recommendations for Correction of Equipment Factors Causing Fatigue in Snowplow Operators
 - North American Study on Contracting Snow and Ice Response
- Worked with the subcommittees and MnDOT to establish contracts with the selected vendors for the following projects:
 - Snow Removal Performance Metrics – Phase I: Synthesis
 - Snowplow Route Optimization
 - Quantifying the Impact that New Capital Projects Will Have on Roadway Snow and Ice Control (RSIC) Operations
- Facilitated a scoping discussion with the subcommittee on the following CTC & Associates project, which is expected to be completed through an amendment to Task 4 Information Services
 - Winter Maintenance Statistics

Research in progress

- Kicked off the new projects below in coordination with the PI and subcommittee. Followed up to track progress and coordinate review of deliverables.
 - Quantifying the Impacts that New Capital Projects Will have on Roadway Snow and Ice Control Operations
 - Snow Removal Performance Metrics
- 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 Specialized Pavement Types
 - Snowplow Operator and Supervisor Training
 - Understanding the Effectiveness of Non-Chlorine Liquid Agricultural By-Products and Solid Complex Chloride/Mineral Products Used in Snow and Ice Control Operations
 - Cost Benefit Analysis of Various Winter Maintenance Strategies
 - Synthesis on GPS/AVL Equipment Used for Winter Maintenance
 - 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
 - Use Of Equipment Lighting During Snowplow Operations
 - Developing a Roadway Salt BMP Handbook
- Worked with the PI and subcommittee to facilitate review of final deliverables and close out the following projects:
 - Best Management Practices for the Prevention of Corrosion of DOT Equipment: A User's Manual
 - Snow and Ice Control Environmental Best Management Practices Manual

Implementation

- Developed a brief report requested by MnDOT that captures the implementation opportunities and impacts for each Clear Roads research project.
- Coordinated TAC review of three implementation-focused documents presented by TAC members during the spring meeting. Follow up discussion will occur at the fall meeting. The two post-project documents presented (Project Closeout Form and Post Project Survey) can then be put to use on recently completed projects. The third document, entitled First Scoping Meeting Questions, was used during scoping of the three FY15 Clear Roads projects.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

- Research, write, and publish the August Winter Maintenance E-News.
- Finalize and submit the article to *Roads & Bridges*.
- Summarize and post online the results of the 2014-2015 Product Experience Survey.
- Conduct a face-to-face meeting of the Clear Roads Technical Advisory Committee on September 21-22, 2015 in Bloomington, Minnesota. Continue to coordinate travel logistics, agenda, etc.
- Coordinate with members of AASHTO and Aurora and to support planning for the 2015 Winter Maintenance Peer Exchange in Bloomington, MN on Sept. 23-25.
- Support MnDOT, evaluation committees, and TAC in coordinating reviews of proposals for new projects.
- Produce briefs of completed research projects.
- Continue to coordinate with investigators and the Clear Roads subcommittees on projects in progress.

STATUS AND COMPLETION DATE:

The contract tasks are progressing as planned. The current contract completion date is August 31, 2016.