



MINUTES

Clear Roads 2007 Annual Kickoff Meeting:

Pooled Fund Project #TPF-5(092) - Test and Evaluation of Materials, Equipment and Methods for Winter Highway Maintenance

Tuesday and Wednesday, January 9 and 10, 2007

Renaissance St. Louis Hotel Airport – Lambert A Room

Attendees:

Tom Martinelli, Wisconsin DOT
Linda Taylor, Minnesota DOT
Tim Croze, Michigan DOT
Lynn Bernhard, Utah DOT
Kim Linsenmayer, CTC & Assoc.

Dennis Belter, Indiana DOT
Dennis Burkheimer, Iowa DOT
Shane Larson, Illinois DOT
Cliff Spoonemore, Wyoming DOT
Rudy Persaud, FHWA – D.C.

Tim Jackson, Missouri DOT
Diana Clonch, Ohio DOT
Adam Padilla, Colorado DOT
Leland Smithson, AASHTO
Bob Lannert, Missouri DOT

Materials Distributed:

Agenda
June 2006 meeting minutes
Quarterly reports for current research projects
Research proposals
Proposal ranking sheet
Snow plow design presentation

Winter Safety Campaign logo examples
Clear Roads Program Administration 2006 Overview
Budget
FHWA Program Update
Summary of plans for the Winter Maintenance Conference

Meeting Objectives and Introductions

The group met to review research proposals scores, hear updates on research projects underway, and share state experiences.

Two new members joined Clear Roads in time for this meeting: Cliff Spoonemore from Wyoming and Lynn Bernhard from Utah.

Research Project and Activity Updates

Calibration Accuracy of Manual and Ground-Speed-Controlled Salters Update

- The group discussed the current status of the project, referring to the 12/31/06 quarterly report.
- The project is now in Phase 3, which has been modified from the original proposal. It's very hard to accurately record salt usage in the field, so more controlled yard tests will be used.
- Bob Blackburn, the investigator, participated in the discussion via conference call. There are no data surprises yet. Getting good cooperation from the manufacturers.
- Bob will include any graphs in next the quarterly report showing actual performance versus theoretical estimates. Bob will issue a separate report with individual controller information and data. Hopes to deliver this in the next month or so.

Determining Effectiveness of Deicing Materials and Procedures Update

- The group discussed the current status of the project, referring to the 12/31/06 quarterly report.
- Ed Fleege, the investigator, along with Curt Pape (Minnesota DOT) and John Mewes (Minnesota DOT), participated in the discussion via conference call.
- The project has gotten a rough start due to problems with using or obtaining the necessary data gathering equipment for the test site.

- There was much discussion about the use of MDSS recommendations in the testing process. If you adjust the MDSS recommendations for a particular test site or desired level of service, aren't you losing the scientific aspect of following the recommended procedure?
- Ed asked the TAC if they were okay with bituminous and concrete getting the same recommendation for application of materials. The TAC said yes and that they weren't trying to differentiate between the two.
- The contract has been extended for one year.

Synthesis of Best Practices for Eliminating Ice and Fog on Winter Maintenance Vehicles Update

Kim reminded the TAC that there is a product evaluation survey available on the Clear Roads Web site for use in recording the results of product testing conducted over this winter.

>Action Items

CTC & Associates: Send a reminder to the TAC about using the Product Evaluation Survey in March.

Winter Maintenance Conference Update

- The conference is expected to take place in Columbus, Ohio on Tuesday, August 28 and Wednesday, August 29, 2007 in conjunction with the Eastern Snow Conference.
- Dennis Burkheimer passed around a handout summarizing goals for the conference and some possible activities (presentations by the states, time for the pooled funds to talk about their goals and activities, call for research ideas, etc.)
- \$75,000 available for funding (\$25,000 each from Clear Roads, Aurora, and FHWA)
- There will be a conference call end of January/early February with the sponsoring groups to begin planning. Clear Roads and Aurora each have subcommittees to organize the conference.
- The funding will primarily cover travel for participants (2 from each state).
- Will need to think more about how to involve vendors in this conference.
- Diana will work on securing the facility and hotel rooms. Need to consider paying someone to coordinate the travel and documentation.

>Action Items

CTC & Associates: Update the budget to reflect \$25,000 versus \$20,000 commitment to this conference.

Diana Clonch: Reserve hotel conference and lodging space for the conference.

Linda Taylor, Lee Smithson, Diana Clonch, Dennis Belter, Dennis Burkheimer: Meet with partner sponsors by conference call to begin planning the event.

Snow Plow Design Project Update

- This project has not progressed much since last summer. Iowa is no longer contracting with CTRE to carry out the research because their expertise did not match up with the needs for the project.
- Indiana got the Reversacast plow but no designs for have been created for manufacturing it. Working on design of a front plow to test in Indiana and an underbody plow on an Iowa DOT truck.
- Underbody plow with three blades/squeegee that could clear 13 ft with one pass planned, within 20 mph of normal traffic speeds. Hasn't been fabricated it yet. Not sure if it will work properly.
- Built 3 multiple blade systems in Iowa for testing this winter.
- Only money spent was on the charette in April and the purchase of Indiana plow. Iowa is funding the three prototype multiple blade front plows being tested in Iowa this season. Iowa may look into purchasing a Flow boy (big flatbed trailer) to put blade under it before fitting under snowplow.
- Need to find someone in the DOT shops with engineering expertise. Possibly reconvene the charette group even by teleconference for a brainstorming about next steps.

>Action Items

Dennis Burkheimer: Move forward on determining next steps for this project. Reconvene charette group for assistance if desired.

Computer Based Training Update

- A wonderful new computer-based training on equipment maintenance is nearing completion, and Tom showed the group portions of it on the computer.
- Lee Smithson has a compilation of input on the training from a broad group of people, including suggestions for additional trainings.
- The group discussed how best to distribute the CDs so that they will be put to use. All three new trainings should be complete by August, and Lee suggested releasing them individually so as not to overwhelm the audience. Tom suggested releasing and announcing them at the various national winter maintenance events throughout the year, posting the release on the Clear Roads Web site and having Clear Roads members announce it at State or Local Government winter maintenance meetings, snow roadeos, etc.

>Action Items

CTC & Associates: Check in with Lee Smithson about status of trainings and when best to announce them in the Clear Roads e-newsletter.

Adam Padilla and Lynn Bernhard: Assist Lee with development of snow plow module of computer-based training.

International Scan Tour Proposal Update

- Linda Taylor let the group know that the proposal on a winter maintenance scan tour to NCHRP was not selected, but that she was told the proposal would be seriously considered in the next round because of extent of support for it. Linda asked for feedback on the format she proposed but didn't get it.
- The group discussed approaching Aurora, APWA and NACE (National Association of County Engineers) for support.
- Next solicitation is in March and the deadline will be in July.

Budget

Kim provided an overview of the Clear Roads budget, including amounts committed and obligated, amounts contracted, and estimated planned expenses.

Based on current and expected expenses and contributions through 2007, there is \$203,606.04 available for new projects in 2007. Refer to that budget worksheet distributed for details.

>Action Items

CTC & Associates LLC: Update the budget to remove the commitment from Massachusetts since they haven't become a member yet, add in CTC's administrative contract costs for 2007, and add \$5,000 for Clear Roads commitment to the winter maintenance conference.

Research Project Proposal Discussion and Selection

Title	Description	Estimated Cost	Estimated Duration	Proposer	Discussion/Results
Friction Measurements as a Winter Performance Measure	Document friction measurements recorded before and after winter operations to show that friction measurements are realistic and reliable winter performance measures.	\$25,000	One winter	Tom Martinelli, WisDOT	<ul style="list-style-type: none"> Ohio is currently testing a Halliday friction unit with the University of North Dakota. Results should come in the next year or so. Would be useful to summarize who is using the friction units and what their experience has been. Have CTC conduct a TSR, working with Tom Martinelli and Diana Clonch to identify those using the equipment.
Cutting Edge Specifications and Testing	Develop a series of standard laboratory tests for snowplow blades that states could use to evaluate blades before purchase.	\$50,000	12-18 months	Tom Martinelli, WisDOT	<ul style="list-style-type: none"> There are current ASTM tests for hardness but nothing for wear. Need to look at what else to consider in testing, including makeup of blade (beyond carbide). Project funded for 2007 at \$75,000. Project Champion: Lynn Bernhard Subcommittee: Tom Martinelli, Tim Croze, Tim Jackson
PNS Partnership	Set aside funds that could be used for partnering with the Pacific Northwest Snowfighters on projects.	\$20,000 per year	ongoing	Tom Martinelli, WisDOT	<ul style="list-style-type: none"> Group discussed setting aside funding for any kind of partnership activities based on how much funding was left over once research projects were selected. Funding allocated for 2007: at least \$10,000
Utilization of Propane for Snow and Ice Removal on Highway Bridges	Determine through laboratory testing the benefits of utilizing propane for removal of snow and ice from highway bridges. The Propane Education and Research Council will contribute \$50,000 towards project.	\$50,000 from Clear Roads.	2 years	Tom Martinelli, WisDOT	<ul style="list-style-type: none"> Proposal came in part from propane industry. Not a lot of interest in this project. Not funded this year.
Control of Roosting Birds on Transportation Structures	Identify and evaluate current pigeon abatement strategies.	\$50,000	3 years	Lynn Bernhard, Utah DOT	<ul style="list-style-type: none"> Project not considered high priority by any of the states as a full research project. Have CTC conduct a TSR to identify current pigeon abatement strategies.

Title	Description	Estimated Cost	Estimated Duration	Proposer	Discussion/Results
Effective Anti-icing Strategies	Quantify the benefits and effectiveness of anti-icing for the different conditions (weather, roadway types and conditions, road classifications, material use and application rates).	\$100,000 - \$150,000	1 1/2 years (two winters)	Linda Taylor, Mn/DOT	<ul style="list-style-type: none"> ● Project would aim to guide where, when and what to apply to get the biggest return on investment. ● Consider as an update to the FHWA Manual on Effective Anti-Icing Strategies. ● TE-28 has some guidelines on this topic (Burkheimer). ● Part of the work would be a guide on how to implement anti-icing in your state. ● This is a big project with strong support but is appropriate for more national involvement. ● Propose this project to NCHRP. Linda will edit the current proposal. Tom, Lee and Lynn will assist her. Rudy suggested proposing to FHWA that this project be an update to FHWA's Manual of Effective Anti-icing Strategies. Each TAC member should approach their local FHWA division contact to plant the seed of support for this project. Linda will develop one page of talking points to send around to everyone for comment.
Improved Winter Patching Products and Procedures	Evaluate materials and procedures for winter patching operations. Identify the quantitative and qualitative benefits.	\$100,000 - \$150,000	6 months – 1 year	Linda Taylor, Mn/DOT	<ul style="list-style-type: none"> ● Problems with winter patching are common. ● Bob Lannert said that he knows someone in Alberta who uses hot mix without even heating the hose as long as it's above -20. It's working much better than what they're doing in Missouri. ● Lee said that a SHRP study has guidance on this topic. You can't throw and go. This may be more of a training/technology transfer effort. ● Linda will report back to group on what Mn/DOT finds in their efforts with Silvex this winter. ● Project not funded.
Correct Recording of Material Usage for Snow & Ice Operations	Develop an automated program and printer for recording material usage at the end of operator shifts.	\$100,000 - \$150,000	1 year	Linda Taylor, Mn/DOT	<ul style="list-style-type: none"> ● Everyone is having a problem accurately tracking salt usage. ● Bob Blackburn's current Clear Roads calibration project will help with this. Maybe should wait to see that final report before moving forward. ● Project held as a potential backup project to fund.

Title	Description	Estimated Cost	Estimated Duration	Proposer	Discussion/Results
Deicing Chemical, Additive or Mix Performance Standard	Establish laboratory tests that can be applied to all deicing chemicals, additives and mixtures to measure performance. Manufacturers would need to use these tests before marketing their products to states.	\$200,000	1 to 2 years	Dennis Burkheimer, Iowa DOT	<ul style="list-style-type: none"> • Very strong support for this project • Wilfred Nixon has done work in this area but we're still waiting for his final report. Dennis Burkheimer will try to get a copy of the draft report. • First phase of this project funded for 2007 at \$100,000. Will include literature search, needs identification and development of testing protocols and procedures. • Project Champion: Shane Larson • Subcommittee: Dennis Burkheimer, Cliff Spoonemore, Dennis Belter, Lee Smithson, Linda Taylor
Carbide Blade Wear and Alarm System	Develop a method to provide snow plow operators with a measurement of wear on carbide inserts used in snow plow blades and an alarm when the carbide reaches a specific threshold.	\$100,000	1 year	Dennis Burkheimer, Iowa DOT	<ul style="list-style-type: none"> • A student approached them about developing an alarm built into a blade to let operators know when the blade is getting low on carbide edge. • New Mexico has already developed something like this. Need to follow up with them. • Project not funded.
National Winter Driver Safety Media Campaign	Purchase and distribute materials developed through the Clear Roads campaign already underway.	\$100,000	1 to 2 years	Dennis Burkheimer, Iowa DOT	<ul style="list-style-type: none"> • Dennis Burkheimer presented work of the committee so far. Slogan is "Ice and Snow, Take it Slow." More logo designs to come in the next few weeks. • Discussion of what products should be created for this effort. Trucks/snowplows could be used as moving billboards by attaching magnetic signs with the slogan/logo. • States who have the resources and in-house expertise could develop TV and radio spots to submit to their stations. • Adam Padilla noted how effective other campaigns are that go through the elementary and middle schools. Get bookmarks for kids printed with the logo. Kids then influence their parents. • Iowa will help with the printing costs. • Lee suggested looking for additional national support for this effort as it relates to SAFETYLU. A letter will go to John Horsley (head of AASHTO) and Mary Peters (Secretary of Transportation) with CC to FHWA Administrator to ask them to give assistance and ideas on how to effectively market the message. • Kim will work with Tom to develop a letter from Clear Roads. No additional funding set aside at this time. \$10,000 currently in the Clear Roads budget.

Title	Description	Estimated Cost	Estimated Duration	Proposer	Discussion/Results
Double-paned Windshield Test and Evaluation	Understand more about the effectiveness of double-paned windshields to help reduce winter precipitation through actual test and evaluation in the field.	\$10,000	1 year	Dennis Burkheimer, Iowa DOT	<ul style="list-style-type: none"> • Iowa will fund installation of a double-paned windshield and will report back on the results. • No funding from Clear Roads this year.
Combination Snowfence	Develop one fence that can be used to control blowing and drifting snow and livestock along existing right-of-way lines.	\$100,000	1 to 2 years	Dennis Burkheimer, Iowa DOT	<ul style="list-style-type: none"> • Not considered a priority for funding by the majority of states. • No funding from Clear Roads this year.
Synthesis of Methods to Prevent Frost/Ice/Snow Formations on Bridge Decks or Roadways Using Alternative Energy Sources	Identify and compile research project results on the use of alternative energy sources to help eliminate or reduce the formation of winter precipitation from roadways or bridge decks.	\$25,000	1 year	Dennis Burkheimer, Iowa DOT	<ul style="list-style-type: none"> • Project considered medium priority by the states. • Have CTC conduct a TSR to identify current pigeon abatement strategies.
Development of Snow and Ice Removal Performance Standard	Develop a performance measure for snow and ice removal by comparing pavement conditions and traffic count data.	\$150,000	1 – 1 ½ years	Dennis Belter, Indiana DOT	<ul style="list-style-type: none"> • Fairly strong support but project is very expensive and not as highly ranked as a few others. • Purdue University has expressed interest in working on the project. Dennis Belter will pursue funding at the Indiana DOT. • No funding from Clear Roads this year.
The Effectiveness of Blending Agricultural Byproducts with more Traditional Liquid Chemicals	Determine if agricultural byproducts can lower the effective temperature, increase the residual value and/or decrease the corrosiveness when blended with more traditional liquid chemicals	??	1 year	Shane Larson, Illinois DOT	<ul style="list-style-type: none"> • Project combined with Dennis Burkheimer's project above: Deicing Chemical, Additive or Mix Performance.
Transportation Synthesis Reports on Winter Maintenance Issues	Produce five quick-turnaround reports of research and best practices on current winter maintenance issues.	\$5,000	2-3 weeks for each report	Kim Linsenmayer, CTC & Associates LLC	<ul style="list-style-type: none"> • Strong support for this project. • Project funded at \$5,000 and three of the five topics were identified: Friction units, roosting birds and alternative energy source for preventing snow/ice/frost on bridges.
Compilation of Performance Measures for Winter Operations in Use by Highway Agencies in North America	Conduct a literature search and survey to identify winter maintenance performance measures currently in use by highway agencies. Compile a report of responses and recommendations.	\$25,000	6-9 months	Tim Croze, Michigan DOT	<ul style="list-style-type: none"> • This project is the same as a NCHRP project currently underway. Will wait for results to come out. • Not funded for 2007.

Following the discussion of the projects and the ranking of the proposals, the committee began preliminary development of RFPs for the two projects that will receive funding: Deicing Chemical, Additive or Mix Performance Standard and Cutting Edge Specifications and Testing. The scopes needed to be scaled back somewhat to match the funding available. Kim will draft the RFPs for review by the selected project champions and subcommittees.

>Action Items

CTC & Associates LLC: Develop draft RFPs for the two new research projects. Request a purchase order for CTC for conducting the five synthesis reports. Look into options for having other Clear Roads member states contract with their universities directly to have work done for the pooled fund.

CTC & Associates LLC: Draft a letter to AASHTO from Tom regarding the winter safety campaign. Distribute to the TAC for review and editing.

CTC & Associates LLC: Send out the list of potential researchers to the TAC for review and editing.

Linda Taylor: Revise the proposal on Effective Anti-icing Strategies to gear it more toward updating the FHWA Manual of Effective Anti-icing Strategies. Propose it to NCHRP. Develop a one-pager of talking points for the Clear Roads TAC members to use when proposing to FHWA division offices that they push for a manual update.

Lynn Bernhard: Act as project champion for the new project Cutting Edge Specifications and Testing.

Tom Martinelli, Tim Croze, Tim Jackson: Participate on the subcommittee for overseeing the new project Cutting Edge Specifications and Testing.

Shane Larson: Act as project champion for the new project Deicing Chemical, Additive or Mix Performance Standard.

Dennis Burkheimer, Cliff Spoonemore, Dennis Belter, Linda Taylor, Lee Smithson: Participate on the subcommittee for overseeing the new project Deicing Chemical, Additive or Mix Performance Standard.

Administration and Marketing

Kim provided an overview of CTC 's activities over the last year on behalf of Clear Roads. Activities included financial and program management, contracting support, meeting planning and coordination and marketing/outreach efforts like the Web site, e-newsletters and article submissions.

Chair Position Rotation

There is currently nothing in the Clear Roads Operating Procedures that dictates how long the chair position is held or how new chairs are selected. Tom let the group know that he will be retiring this summer, which is an opportunity for the group to decide how to handle the position. Dennis Belter expressed some interest in taking on the responsibilities, but he was concerned about the time commitment. Tom will think about how much work is involved in this position and try to capture this in writing for consideration by the group.

>Action Items

Tom Martinelli: Develop an outline of Clear Roads chair responsibilities for discussion with the committee by conference call in the spring.

Next Meeting

The next face-to-face meeting will take place in Madison, Wisconsin for two of the following three days: July 31, August 1 and August 2. A representative from WisDOT's Purchasing group will need to be present to oversee the scoring and selection of proposals for the new research projects. Kim will investigate meeting locations and get back to the group on the exact dates of the meeting.