



MINUTES

Clear Roads 2005 Kickoff Meeting:

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

Wednesday and Thursday, February 16 and 17, 2005

Holiday Inn Select Minneapolis/St. Paul, Waldorf Conference Room

Attendees:

Tom Martinelli, Wisconsin DOT

Dennis Belter, Indiana DOT

Dennis Burkheimer, Iowa DOT

Tim Jackson, Missouri DOT

Ben Zwart, Minnesota DOT

Tim Croze, Michigan DOT

Diana Evans, Ohio DOT

Rudy Persaud, FHWA-Washington D.C.

Kim Linsenmayer, CTC & Associates

Materials Distributed:

Agenda

Contact list

Clear Roads budget

List of potential researchers

Problem statements and summary sheet

Sample RFP and sample RFP scorecard

Problem statement preliminary ranking sheet

Summary of 2004 Clear Roads problem statements

History of Clear Roads PowerPoint presentation

Clear Roads brochure

List of marketing ideas

Meeting Objectives

The group met to review and select research proposals for 2005, discuss the RFP and contracting process, review the administrative groundwork for the pooled fund, and to decide how best to propose and select research topics to pursue.

Dennis Burkheimer kicked off the meeting by handing out a brochure on the Iowa living snow fence conservation reserve program, which assists private landowners in setting up living snow fences on their property along state-maintained highways.

Wayne Lupton from Colorado was unable to attend the meeting but is very interested in attending in the future.

Clear Roads Overview

Tom gave a brief presentation on the history of Clear Roads and recapped the project proposal and RFP process that took place in 2004.

Clear Roads Budget

Kim presented the current Clear Roads budget, highlighting the amounts that had been committed and obligated and the estimated expenses. Below is a brief summary:

\$325,000 has been committed by six states

\$225,000 has been obligated and the remaining \$100,000 is expected to be obligated by 12/31/05

\$46,000 estimated expenses (administration and travel)

Estimated available funds for research projects: $\$325,000 - \$46,000 = \$279,000$

The group discussed the importance of encouraging 2006 commitments and obligations from each state right away. Michigan made a 2005 contribution to Clear Roads by applying funds already obligated to the Winter Concept Vehicle pooled fund project. Tim Croze indicated that he has already submitted a written request for 2006 Clear Roads funding from Michigan.

All eligible travel expenses will be reimbursed from the Clear Roads pooled fund through CTC & Associates. CTC & Associates will pay for group expenses like lodging, group meals, and conference facilities at the time of the meeting, and meeting participants will submit individual reimbursement requests (such as airfare and individual meals) to Kim Linsenmayer following the meeting.

Since expenses are coordinated through CTC's administrative contract, the TAC members agreed that it was not necessary to follow the reimbursement guidelines of any one state.

>Action Items

CTC & Associates: Send the Clear Roads Expense Reimbursement Form to meeting participants.

CTC & Associates: Incorporate general expense reimbursement guidelines and submission of receipts into the Clear Roads Operating Procedures document.

Proposals

Ten projects were formerly submitted for consideration by TAC members. Dennis Burkheimer emphasized that throughout the day's discussions any and all project ideas, whether from TAC members or not, are encouraged.

TAC member provided an overview of each of their proposed projects, and the group discussed any questions and concerns related to the projects. Each project is summarized in the problem statements submitted by the members. Below are some of the discussion points that arose for each project.

Calibration Accuracy of Ground Speed Controlled Salters

- Concern over varying factors that would affect results, such as moisture content, consistent salt piles, different trucks. How do you compare apples to apples?
- Ohio did a benchmark test for RWIS and the same approach may apply: manufacturer demonstrates how to properly calibrate and then the study would verify if the calibration is accurate after calibrating per the manufacturer's instructions.
- Related project: Clear Roads could compile a list of calibration information for the various manufacturers. Perhaps Kim could do this by completing a Web search of information?
- The controller (driver) also poses a consistency challenge for testing accuracy. Maybe it's a training issue and the research could focus on dollars lost as a result of calibration inaccuracy. Keep this in mind for the implementation plan.
- How can we be fair to all the manufacturers?
- How long will the results will good? Manufacturers come out with new products all the time.
- Manufacturer input up front is critical to address the fairness issue, but we need to keep in mind that we're testing the field where there are lots of variables and that's the point. How well does the calibration hold up under the varying conditions that are present in real life?
- Tom's intention was to test a single controller but there was concern over picking on a single manufacturer. Perhaps test six of them (one used by each member state?)

Effectiveness and Efficiency of Underbody Plows

- Almost all of the plows used by Michigan and Minnesota are underbody.
- What about considering a down pressure front plow, which provides the same down pressure but in a different location? It's less expensive.
- Indiana has resisted using underbodies because of the cost but has heard that underbodies may be safer. Is it worth considering the safety component in the study?

Optimum Snow Plow Design

- Iowa has developed three slush blades and is trying to develop a broom.
- Concern about cost of the finished plow. However, if you save money from reducing the number of times a plow needs to go over the same road by getting it all the first time, perhaps you'll save more than you invest.

Carbide Blade Insert Standardized Performance Testing

- Interested in testing for just carbide inserts or all blades?
- A metallurgical lab will likely be needed to conduct the tests.

Anti-fogging/frosting Windshield

- Project would take the form of a comprehensive literature search to identify best practices used by the states.
- Minnesota has tried heated wiper blades without success.
- Concern about manufacturer reaction to the results.
- Would any testing be involved?

Comparison of Bridge De-icer Systems Throughout the Country

- SICOP synthesis has a list of bridge de-icers. This study could maybe be a follow up to this with the states.
- Study could be an in-depth look at what's out there: literature search/survey.
- Freeze Free has been tested and the report is coming.
- Project may be a good fit for an NCHRP Synthesis that Clear Roads would contribute to.
- Related project suggested: Implementation of Bridge De-icers-Guidelines for Selecting and Installing.

Investigation of LED Arrow Board Visibility

- New versions of LEDs come out all the time. How do you generate test results that have any staying power?
- Incorporate study of LED warning lights for trucks?
- Consider looking at electroluminescence (safe lights)—great technology but easily broken.

Manufactured Low Cost Chemical De- and Anti-icer

- Ask a vendor to create chemical that meets state specifications.
- Wilfred Nixon is looking at alternative de-icing chemicals and developing a standardized test and performance measures. His report is expected to be complete in June or July 2005.
- Cost of the chemical is going to be extremely high.

Agricultural Products vs Salt Brine, Magnesium Chloride, and Calcium Chloride for Anti-icing and De-icing

- May be worth talking to those involved in precision farming.
- Look at ag products that don't have chloride. Just one available?
- Would like labs to test for effectiveness of products—right now they only test for corrosion. Then the vendor could make results available to states when selling product.

Correlation and Cost Effectiveness between Winter Maintenance and Safety

- A number of studies have already been done on this topic.
- Perhaps a study looking at benefits for Clear Roads member states.
- Another research idea—benefits of investing in Clear Roads or Aurora.

Other Project Ideas

- When and where to install anti-icing on bridges. NCHRP project 6-16, [Guidelines for the Selection of Snow and Ice Control Materials to Mitigate Environmental Impacts](#), is expected to be completed this fall.
- Microwaveable roads. Nebraska is pursuing the idea through NCHRP. Cost would be astronomical.
- Education of work force to optimize use of zero-velocity spreaders and other equipment. Ohio saw big reduction in salt usage in areas where zero-velocity spreaders had been properly used. But it's difficult to get right leadership and training to ensure proper use. Expand computer-based training?
- Frost control on bridge decks. If you pretreat the bridge, the bridge might get damaged by the chemicals, but pretreating can prevent having to go over the bridge multiple times and use more de-icing materials later, which can also cause damage. Study could evaluate the best approach for handling bridge ice for safety and bridge longevity.

>Action Items

CTC & Associates: Incorporate idea of associate members into operating procedures (look to Aurora as example)

Dennis Belter: Send Kim contact information for Dr. Bob McCullouch from Purdue—potential researcher.

CTC & Associates: Email Transportation Synthesis Report on LEDs to meeting participants.

CTC & Associates: Look into what would be involved to complete a list of calibration settings for various manufacturers. Could post results to Clear Roads Web site.

Ranking the Proposals

Each TAC member gave the ten formal proposals a score on a scale of 1 (no need) to 5 (absolute need). They also scored three additional proposals that had come out of the day's discussions: FAST Bridge System (guidelines for when and where to install), Computer-Based Training (contributing funds potentially along with other states to add chapter(s) to existing training through SICOP), Effect of Anti-Icing on Bridges.

Four projects emerged from this vote with strong overall support:

- Snowplow Design
- Carbide Blades
- Manufactured Chemicals
- Ag Products

In addition, four other projects received at least some strong support:

- GSC Salters
- FAST Bridge Systems
- Computer-Based Training
- Anti-fogging

Cost was of significant concern for the group with regard to all four top proposals. Because Clear Roads is new and still recruiting members, there isn't the funding power of a well-established pooled fund. It was also difficult for the members to assign what they considered to be accurate cost estimates.

The group decided to submit NCHRP proposals for the Snow Plow Design and Carbide Blades proposals later this year instead of trying to take them on with the current funding available in Clear Roads. The Agricultural Products proposal posed the challenge of having results that would likely go out of date quickly. The group decided to hold off on this study, review the lab work currently underway by Wilfred Nixon, and then maybe later consider a follow-up study that would look at de-icing products (including agricultural ones) in the field.

The Computer-Based Training project was generally well-supported but it was unclear how best to go about funding it. Ideally, multiple states would be involved in extending the original pooled fund effort to add new training chapters. Also, it would be three years before the results of the investment would be seen, which means it wouldn't fit the TAC's current goals of funding projects that would yield quick results—demonstrate the success of the Clear Roads as a pooled fund. The group decided to hold off on this one while they looked into how best to go about funding it and identifying exactly what information would be covered.

The following three proposals were selected to move forward in the RFP process for Clear Roads this year. The project champion (TAC member who will be the contact and lead technical representative on the project for Clear Roads) is specified next to each one.

- Calibration Accuracy of Ground Speed Controlled Salters—Tom Martinelli
- FAST Bridge Evaluation (Survey of current state practice and experience)—Ben Zwart
- Anti-Fogging (Survey of tools and techniques)—Tim Jackson (Dennis Burkheimer will provide assistance)

>Action Items

Dennis Burkheimer: Write NCHRP problem statements for Snow plow Design and Carbide Inserts proposals.

Dennis Burkheimer: Send Clear Roads members the project statement for Wilfred Nixon's current lab study identifying specifications for de-icing products.

Dennis Burkheimer: Talk to Lee Smithson about how best to advance the Computer-Based Training idea and get other states involved in funding new chapters.

CTC & Associates and Tom Martinelli: Review current WisDOT research projects for guidance on the estimated cost for the selected Clear Roads projects.

Pacific Northwest Snowfighters Meeting Update

Ben Zwart provided an overview of the December PNS Corrosion Forum meeting that he attended on behalf of Clear Roads in December 2004. He shared what he learned about PNS testing procedures (following NACE standards).

Dan Williams (Montana DOT) said he would like to see someone from Clear Roads attend the early June spring conference. TAC members agreed that it would be a great opportunity to connect with the western states and promote Clear Roads' efforts.

>Action Items

Tom Martinelli: Find out more about the upcoming PNS meeting to share with the group.

RFP Development

The group discussed the specific steps involved in developing, distributing and scoring the RFPs for the three selected Clear Roads projects. Below is a tentative timeline:

March 15th—draft RFPs distributed to all TAC members

Week of March 15th—conference call to finalize RFPs and list of researchers

April 1st—post RFPs. Allow eight weeks for a response. Incorporate an opportunity for investigators to revise RFPs if they don't fulfill the requirements.

June or July—face-to-face TAC meeting to interview proposers, if necessary, and select investigator for each project.

July—award projects

August—work with investigators to finalize work plans

September/October—begin preliminary work on the projects

>Action Items

CTC & Associates: Work with Ben Zwart and Tim Jackson to develop RFPs for FAST Bridge project and Anti-fogging project.

CTC & Associates: Check with Steve Martinelli (WisDOT purchasing) to inquire about timeframe for posting RFPs.

Tom Martinelli: Refine RFP for Calibration of Ground Speed Controlled Salters based on last year's RFP.

Rudy Persaud: Send Kim a list of potential other researchers who should receive the Clear Roads RFPs.

Dennis Burkheimer: Contact Aurora to get their list of potential researchers for adding to the Clear Roads list.

Clear Roads Administration

The group discussed broad goals for Clear Roads as well as specific administrative goals for CTC & Associates over the next year and beyond.

- TAC members voted to have at least two face-to-face meetings every year following a somewhat predictable schedule. This will aid in early planning and coordination with other groups.
- The TAC was interested in Clear Roads becoming more than a group that funds research projects. Ideally it would serve as an information clearinghouse and would facilitate information sharing on winter highway maintenance. Meetings would involve guest speakers and representatives from companion pooled fund efforts.
- CTC will post meeting minutes to the Clear Roads Web site after receiving approval from the TAC.
- Quarterly administrative project reports will focus on goals and accomplishments rather than the minute details of TAC discussions.

>Action Items

CTC & Associates: Complete development of Clear Roads draft Operating Procedures and 2005 Work Plan. Have TAC review and post on site, along with meeting minutes.

CTC & Associates: Complete summary of 2004 Clear Roads activities and post on Web. Write quarterly reports going forward.

Clear Roads Marketing

The group discussed marketing opportunities and where efforts should be focused in the short term.

- Update last year's brochure to include descriptions of the three projects selected for 2005. Work with TAC members on printing the brochure in house.
- Consider Web features to draw visitors—calculators, screen savers, charts, etc.
- Contact states directly to get them interested: Colorado (Wayne Lupton), Pennsylvania, New York, Nebraska, Washington, North Dakota (Jerry Horner), Kansas (Jackie Vogel), Tennessee (Joe Holt), Alaska

>Action Items

CTC & Associates: Update Clear Roads brochure and look into printing costs/options.

Dennis Burkheimer: Contact states to talk about Clear Roads and potentially invite two representatives to our June/July meeting.

CTC & Associates: Work with Dennis Burkheimer on follow-up with states—Clear Roads letter/invitation.

CTC & Associates: Look into Web enhancements that will entice those in winter maintenance to visit and learn about Clear Roads.

Joint Meetings

The TAC discussed the possibility of having a joint meeting with Aurora or other related groups to share expertise and collaborate on projects. The difficulty is handling this logistically. Look for opportunities to piggyback a Clear Roads meeting on another meeting already in place.

- Clear Roads has a standing update spot on the Aurora agenda.
- Every other December Aurora hosts a "Friends of Aurora" meeting to invite vendors and others who will showcase products and research. Next one is in 2006.
- Keep sending someone to the PNS meetings.
- Invite Lee Smithson to Clear Roads meetings—he has connections to numerous winter maintenance groups.
- Diana and Dennis Burkheimer will be at the APWA Snow Conference in April and will talk about Clear Roads.

>Action Items

CTC & Associates: Work on an introductory letter to Aurora to introduce the idea of joint research projects.

Next Meeting

The next meeting will be a conference call in March to discuss the draft RFPs. After that the group will meet in June or July to review and score the proposals received. The TAC voted to hold this meeting in Madison, Wisconsin to keep costs down. This will also allow for easy participation by the WisDOT purchasing representative in the scoring process.

For questions about these minutes or anything else related to the administration of this pooled fund project, contact: Kim Linsenmayer, CTC & Associates LLC, kim.linsenmayer@ctcandassociates.com, 608-628-3806