



Clear Roads 2005 Summer Meeting:

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

Wednesday and Thursday, July 13 and 14, 2005

The Madison Concourse Hotel/ Madison, Wisconsin/Conference Room #2

Attendees:

Tom Martinelli, Wisconsin DOT
Tim Jackson, Missouri DOT
Diana Evans, Ohio DOT
Pat Casey, CTC & Associates

Dennis Belter, Indiana DOT
Ben Zwart, Minnesota DOT
Wayne Lupton, Colorado DOT
Kim Linsenmayer, CTC & Associates

Dennis Burkheimer, Iowa DOT
Tim Croze, Michigan DOT
Steve Martinelli, Wisconsin DOT

Materials Distributed:

Agenda
Draft NCHRP problem statements
RFP scorecard
Quarterly progress reports

Wisconsin's new lead state pooled fund procedures
Clear Roads budget
History of Clear Roads PowerPoint presentation
Minnesota DOT presentation

Meeting Objectives

The group met to review proposal scores and select a vendor, discuss research opportunities and share state experiences.

Wayne Lupton from Colorado attended the meeting as a guest.

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.

Anti-Fogging/Anti-Icing Project

Clear Roads received no proposals in response to the RFP on anti-fogging/anti-icing practices for winter maintenance vehicles. Pat Casey of CTC & Associates gave a brief presentation on a possible approach that CTC & Associates could take to completing the requested work. Pat passed around examples of transportation-related research and survey work and answered questions from the TAC.

TAC members agreed to have CTC draft a full work plan and budget outlining CTC's plan for completing the project requirements.

Dennis Burkheimer suggested that the Clear Roads Web site be used as a repository for winter maintenance research, especially by the Clear Roads member states. This would facilitate information sharing and help the Clear Roads site become a key destination for others in this field.

>Action Items

CTC & Associates: Email Transportation Synthesis Reports on snowdrift control and anti-caking agents to Dennis Belter.

CTC & Associates: Draft a full work plan and budget for the survey project for the TAC to review within a month.

All TAC members: Send links and electronic documents on recent/relevant winter maintenance research within your state or that you've used as a key resource.

Snow Plow Design Project

Dennis Burkheimer discussed a potential opportunity for accomplishing some of the research goals of the TAC with regard to advanced snow plow design. At the February meeting, the TAC had identified the development of new snow plow technologies as a high priority for the group, but there was not enough funding within Clear Roads yet to cover the costs of such a project. The Winter Concept Vehicle pooled fund, in which many of the Clear Roads members participated, has an outstanding balance and is no longer funding new projects. As the lead state representative on that pooled fund, Dennis Burkheimer suggested that Clear Roads identify plow-related research that could be funded or partially funded using the remaining Concept Vehicle funds.

The Center for Transportation Research and Education at Iowa State University completed four reports for the Concept Vehicle pooled fund already. Additional contracts could be developed between CTRE and the Iowa DOT with little effort and low overhead. The TAC discussed possible ways to accomplish some of the research goals in snow plow advancement using the limited funds available. It's important to the group that projects undertaken under Clear Roads sponsorship have definitive goals and deliverables that the group can point to.

Below are some of the ideas that emerged on how best to use the funds:

- Conduct a comprehensive literature search (look to Europe for their advancement snow plows)
- Buy a plow that looks promising and test it in the field
- Work with manufacturers to develop a new plow using TAC member ideas (the Swiss army knife plow)
- Work with a metallurgy department to develop lightweight strong materials for use on a plow
- Develop a marketing plan and detailed approach for a full-blown design effort
- Fund initial steps like the literature search and detailed scope with the Concept Vehicle funds and following stages with Clear Roads funds.
- Use Iowa or Missouri DOT shop services under CTRE direction to save money.
- Issues of ownership for whatever is developed will still need to be addressed, especially if working with manufacturers.

TAC members agreed to take the following next steps:

- Dennis Burkheimer will work with CTRE on a proposal to present to the TAC based on the previous Clear Roads RFP#258340. The proposal should consider several different options such as doing a literature search, buying and testing plows, conducting lab work to design and develop components, working with manufacturers, etc. This process could also involve talking with manufacturers to gauge their interest in such a project.
- The TAC will review the proposal (s) from CTRE and decide on final scope of work.
- CTC & Associates will coordinate with Dennis Burkheimer and CTRE on the tracking and reporting of progress on the project.

>Action Items

Dennis Burkheimer: Work with CTRE to develop a proposal for work related to snow plow design and testing. Proposal to come back to the TAC in the next 30 days or so.

Dennis Burkheimer: Check with Iowa DOT legal department on how best to address issues of ownership.

CTC & Associates: Follow up with Dennis on CTRE proposal development.

NCHRP Problem Statements

At the February meeting, two of the TAC's highest priority research projects (performance of carbide inserts and snow plow design) were thought to be too expensive to undertake with the funds available in Clear Roads. The TAC decided that it would be worth developing and submitting problem statements through NCHRP for these projects, possibly with the promise of some financial contribution to the projects from Clear Roads. Dennis Burkheimer developed problem statements for these project ideas and presented them to the TAC.

Below are the key points that came up regarding the problem statements:

- Deadline is September 15th
- Aurora has submitted problem statements to NCHRP with the promise of a funding contribution. Project approved but no funds requested from Aurora.

- Who should submit the problem statements?
 - Dennis Burkheimer is already submitting problem statements from Iowa and would prefer to have another state be the key submitter for the proposal.
 - It would be good to indicate strong support from multiples states by means of a letter from Clear Roads, listing of all TAC member names, etc.
 - Wayne Lupton said that he would be attending his AASHTO Subcommittee on Maintenance meeting next week and could bring the proposals to that group and ask for their support as well.
- Because the TAC is going to start pursuing the snow plow design by using the Concept Vehicle funds, members decided to hold off on the snow plow problem statement and only submit the one on carbide inserts.

>Action Items

CTC & Associates: Revise the problem statement on carbide inserts as necessary to fit the formal format specified by NCHRP and to include edits made by the TAC members. Send the revised problem statement to Wayne for discussion at the AASHTO meeting.

CTC & Associates: Look into the NCHRP process for submitting problem statements to identify the best way for a group of states to submit a problem statement and demonstrate support.

CTC & Associates: Include the NCHRP problem statement in the revised Clear Road brochure, along with partnership project opportunities (snow plow project, computer based training?)

Computer Based Training Update

Tom Martinelli and Tim Jackson updated the group on the response to Clear Roads' interest in the development of additional training modules for the computer-based training. Tim attended an AASHTO/SICOP meeting in May on behalf of Clear Roads at which further development of training modules was discussed. Participants at the meeting agreed that computer-based training is the way to go.

- SICOP already has 24-30 scenarios to add to the lessons
- Willing to work with Clear Roads
- Lee Smithson wants Clear Roads representation on the TAC, which several TAC members acknowledged is a big time commitment.
- FHWA may provide funding for additional lessons on other topics
- Funding not determined for new set of modules outside of the anti-icing scope
- Subcommittee being put together for SICOP to develop new CBTs and get the pooled fund going. Looking for help from Clear Roads.

TAC members discussed how involved Clear Roads representatives should/could be in the computer-based training pooled fund. No immediate volunteers emerged. Dennis Burkheimer agreed to communicate with Rick Nelson and Brett Hodne about the topics that Clear Roads is interested in seeing developed in modules but would not serve as the representative for the new effort. Clear Roads TAC members agreed to decide on next steps in terms of Clear Roads contribution of money and expertise after hearing feedback from Dennis.

>Action Items

Dennis Burkheimer: Discuss with SICOP the topics that Clear Roads would like to see addressed in new training modules (as outlined in our correspondence with Lee Smithson). Report back to Clear Roads on planned steps for getting the pooled fund underway, gathering funds and launching project.

Open Discussion

TAC members took advantage of being ahead of schedule at the meeting by discussing recent activities and issues within the member states.

Colorado DOT is doing a survey of FAST bridge systems.

- Gordon Bell doing the work
- Survey went out
- Designed to help Colorado developed standard specifications but doesn't address location. Ohio looking at site selection for systems
- Clear Roads will post report on site when completed.

Pavement treatments and detection

- Colorado looking at cameras that could replace RWIS systems by determining pavement condition.
- Iowa gave up on friction measurement because it's hard to do, it's intrusive, and expensive when they tested friction wheels.
- Ohio uses tow-behind unit to measure grip.
- WisDOT's anti-icing overlay (Cargill "SmartLane")
 - Being used in northern Wisconsin.
 - Claim was that it allows you to treat a bridge and not retreat it for the rest of the winter.
 - Put overlay down in summer 2003, has been in service 2 winters and is holding up real well.
 - Epoxy aggregate overlay.
 - Treat bridge the first of each month.
 - Bridge is 2 lanes, 130 ft. long
 - Mag chloride used so it is the overlay or mag chloride that is causing success?
 - Overlay is expensive--\$9/sq. ft. Dennis Burkheimer found FAST systems to be cheaper.
- Indiana uses Ice Ban
- Colorado stopped using a 50/50 blend of Ice Ban because so hard on the environment
- Iowa is testing a "fiesta blend", mixing salt brine and calcium chloride to give better performance at low price. Hoping to have final blend this year. No success with grain products yet but still testing.
- Laboratory study on de-icing test procedures by Wilfred Nixon. Dennis Burkheimer will look into the results.

Performance measures

- NCHRP just started performance measures project 06-17.
- Ohio used to have performance measures for snow and ice but it wasn't working well and was dropped. There are so many variables that affect maintenance success.
- Colorado has been asked to look at the number of road closures and the amount of time the chain law is in effect. This is bad because overtime pay goes up and material use increases in effort to avoid any negative report on performance.
- Iowa and Ohio looking at average speeds of traffic for overall maintenance performance, but so many things impact speed.

Prewetting solids

- Prewetting at auger versus at the spinner produces great results in Ohio
- Minnesota has also been doing this for years.
- In Iowa drivers complain of not being able to see the material come out of the rear of the truck. Missouri and Indiana say the bigger problem is turning up the application rate because the driver can't see how much is coming out.
- In the Wisconsin Concept Vehicle project a paddle wheel would turn when the material was coming out so that the driver could monitor in the cab the material hitting it. This system never worked well. Also tried cameras, which were helpful but not great at night.
- Dennis Belter said that a rear sensor is the best way to tell what's coming out.

>Action Items

Dennis Burkheimer: Look into the results of the study by Wilfred Nixon on de-icing test procedures and share with the group.

Scoring the Proposals

Clear Road received five proposals in response to the RFP on calibrating spreaders. Steve Martinelli facilitated an active discussion about each of the proposals using the TAC members' preliminary scores as a starting point. Members were given the opportunity to explain and adjust their scores during this meeting.

After lengthy discussion, the TAC's highest score went to Blackburn and Associates. Steve Martinelli will notify proposers of the results and intent to award. The TAC agreed that further discussion with Blackburn on the details of the deliverables and timeframe would be necessary before a final contract could be signed. The group hopes to get work underway as soon as possible.

Tom Martinelli will be the champion for this project. The entire TAC will review progress on the project at the face-to-face TAC meetings. However, a subcommittee of state representatives will assist Tom with ongoing project support and evaluation. Each TAC member will ask someone from his or her state to serve on this subcommittee with the understanding that the scope or intent of the project cannot be reexamined at this point.

>Action Items

All TAC members: Email any additional comments and questions about the Blackburn proposal to Kim and Tom by Friday, July 22nd.

Steve Martinelli: Notify proposers of intent to award. If no objections, begin preparing purchase order documents.

CTC & Associates: Work with Tom to compile TAC member comments on Blackburn proposal and arrange time for group to meet with Blackburn by conference call.

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:

\$400,000 has been committed by six states.

\$250,000 has been obligated and another \$100,000 of the amount committed is expected to be obligated by 12/31/05.

\$46,000 estimated expenses (administration and travel) for 2004/2005.

\$12,246.99 actual expenses so far.

The group discussed the importance of securing 2006 commitments and obligations from each state in anticipation of funding new projects next year. Michigan is expecting to commit for 2006, 2007, and 2008 beginning in October.

The budget for travel for TAC members will likely need to be increased next year. Also a new year's worth of travel and administration fees will need to come out of the budget.

Below is a quick glance at estimated remaining funds available for new projects next year, as discussed at the meeting. Clearly, the group needs more members in order to fund substantial new projects every year.

| | |
|--|------------------|
| Total estimated obligated funds through 2006 (\$350K obligated by 12/31/05 plus MI's \$25K for '06) | \$375,000 |
| Calibration project | -\$188,000 |
| Anti-icing/fogging project | -\$25,000 |
| 2004/2005 administration/travel | -\$46,000 |
| <u>2006 administration/travel (includes increase for travel)</u> | <u>-\$46,000</u> |
| | *\$70,000 |

*The group may also contribute funds to the proposed NCHRP project on carbide blades and the development of computer-based training modules.

>Action Items

CTC & Associates: Revise budget presentation format to be more easily understood by TAC members.

State Updates

Dennis Burkheimer (Iowa)

- Using more salt, less abrasives.
- Drop in amount of time spent on snow removal.
- 250-300 trucks or trailers with liquid anti-icing capabilities. All trucks are equipped with prewetting capabilities. Working on ways to maximize the dry and liquid materials at same time.

- New Flow Boy trailer—huge trailer with dry materials. Fabricated the tank part themselves out of stainless steel.
- Experimenting with designing and building own slush blades—three versions so far.
- New application guidelines developed.
- Snow control
 - Success on test area for standing corn
 - Vortex generator being tested to accelerate snow off the ramp and handle drifting. Not enough snow for good testing this year.
 - “Army” of tretrapods being tested to trap snow and keep it from dropping on the ramp. Worked well but need to space them closer together (6-8ft.) Requires lots of lumber so other approaches (like planting bushes) make more sense.
 - Great response to living snow fence program. See news release for more information at <http://www.dot.state.ia.us/morgue/news2005/01030501.htm>
- Going to buy a driving simulator in 2005 to train plow drivers. Cost is about \$200,000 from L3 Communications but includes a whole package (details?). Tested out with operators who found it incredibly realistic and helpful. Can only train 2 people at a time. Plan to use a train the trainer approach to get an instructor ready in each district.
- Wireless Internet available in rest areas. Will add kiosks with traveler information soon. Cost not paid by DOT—advertising allowed beyond first page. Not a revenue generator.
- Enhancing traveler information systems with speed sensors, cameras.

Dennis Belter (Indiana)

- Substantial reorganization in progress. Hoping to get at least three new people in the Snow and Ice group—more than ever before.
- Working on a Snow Conference (4th annual?). Will invite managers, unit foremen, crew leaders, drivers—about 30 at each site last time.
- Working on MDSS pooled fund.
- Working with Purdue on research on AVL.
- Annual rodeo focusing on truck safety. Dennis Burkheimer noted that the rodeo disappeared in Iowa when the plow drivers started taking construction jobs in the summer.
- Wanted to try wireless connections at rest areas before the reorganization. Had to remove the weather information stations because of cost.

Tim Croze (Michigan)

- AVL
 - Three years ago started AVL/Data Collection project. Collected first full year of data this winter with promising results. Equipment in the snow plows seemed to be vulnerable though (roughly ½ of the modems broke during the winter), they have addressed these problems by installing vibration absorbing mounts and strengthening electrical connections in the modems. The AVL vendor is Thomtech Design from St. Paul, Minnesota.
 - The eventual goal of this project is to combine the data collection with their current financial software to automatically fill out time cards and material usage reports.
 - AVL on 22 trucks. Hoping to expand the project after another winter of data collection. Use wireless modems for communication. Uploads within mile radius of garage.
- Annual snow conference for this fall—first one.
- Salt
 - Just received bid prices for salt. Prices 10% higher than last season. Pay \$25-\$28/ton for early fill and \$35-\$45/ton for seasonal backup. Pretty competitive prices b/c mine in Detroit.
 - Dennis Burkheimer suggested adding salt contract and salt specs to the Clear Roads web site? He wants prices in particular.
- Having a statewide rodeo this year w/ local agencies and counties w/ winners.
- MI has fallen behind other Midwest states in the winter operations area but is now slowly moving forward.
- Put in one RWIS site last year that’s working well. Hope to put in more. Oakland county has 6 RWIS of their own, plus a FAST system and AVL on trucks. Just one district (SW) doing extensive anti-icing. Sporadic anti-icing going on in 3 other districts.

Tim Jackson (Missouri)

- Tow plow—30 ft tow behind plow behind tandem truck. Swings out hydraulically. Started use for gang plowing—replace one or two of the trucks. Worked well there. Clears 27 or 28 feet—two lanes. Controlled all within cab. Viking working on patent rights. 20-foot version could be used on any divided highway to do driving lane and shoulder at once. Have built a couple before giving rights to Viking. No problems with traffic. Very lit up—LEDs, flashing, etc. No intention of using a safety truck behind. One pass clearing desired
- Problems w/ salt storage. Closing some buildings b/c consolidating. A few complaints of runoff from neighbors of buildings. Now down to 314 buildings. People complaining that service will go down if buildings closed and then get the legislature on their side so having to close buildings one at a time.
- Basic snow removal training 2 yrs ago statewide. Last year developed training for ground speed controllers. Very good results in terms of usage. (GL 400 training). Help them do minor trouble shooting. Classroom and hands on training. Codes/calibration/etc.
- Advanced snow removal training this year created for experienced employees and supervisors to reinforce policies.
- No FAST systems, limited RWIS (15 sites). Encouraging RWIS training in districts.
- Salt
 - Salt bids up 10% this year (\$39/ton average)
 - Problem w/ one company delivering salt. How are others handling liquidated damages? Other states also getting salt late. Indiana districts will give some leeway unless looks like abusing it. Iowa automatically reduces payment to vendors based on how late the delivery is. Districts don't have input on it. The salt still doesn't come any faster.
 - Ohio looking at why late salt delivery is an issue in terms of ordering practices. Maybe waiting too long to order and have to compete w/ neighbors for orders. Addressing what adequate inventory is. Iowa limits amount that can be ordered to make people order sooner (max 250 tons). Missouri has 20% limit of their total order in any one week. Ohio monitors daily inventory and let them know if they're getting too low. Salt in Missouri from Kansas, etc.
- Used to have rodeo until state auditor called it a waste of money. New director from New Mexico likes them and is reinstating them in Missouri.
- Tim asked Ben a question about research methods. MnDOT putting together book on to effectively get data in a research project. Ben says the information is online at Minnesota DOT at maint. under research.
- Indiana comment—they're training with the national weather service who put together training course for city. The training is very good and offered to the districts—provided it in districts for winter weather. Meeting next week with them to talk about improving/updating it. Maybe other states could check w/ local weather services
- Started a winter reporting database using Lotus Notes, organized by building material usage, equipment.

Diana Evans (Ohio)

- 43,000 lane miles of roadway, over 200 garages, over 1500 trucks in fleet, 2500 maintenance employees. Spend about \$70 million on snow and ice/yr.
- Agency implemented anti-icing a few years ago. More chemicals instead of more people.
- Ohio has a phenomenal RWIS system. Expansion last few years multi-million dollar. About 150 RWIS sites—some are weather stations at garages without pavement sensors. Current research project looking at bridge deck simulators effectiveness—concrete block holding environmental sensing station collecting data on bridge decks. Nighttime is best because you don't have the effects of thermal heat.
- Also doing research on effectiveness of salt brine, effects on speed and winter driving of winter weather.
- Looking at how much salt storage really needed as a research project
- In-house road grip tester project since 2002. Deploying several units this year on snow plows and tow behinds. Want to outfit entire garage facility plow group with gripper to gather friction data. See how integrated into operations and how worthwhile maintenance efforts are. Use to detect areas like black ice and frost, help decide whether or not to send workers home, decide whether to adjust treatment, put out caution warning. Wanted someone highlight their research at a national level through NCHRP but it didn't get selected as a project.
- What's the correlation between the temperatures gathered on bridge decks from sensors and actual conditions on area bridges. Project should be done within next year.
- Great success in state with using brine. Help reduce salt usage. Hard to make enough brine for what's needed

- ODOT has truck routing program that is NOT working well. Don't use. They work with Winter Plan with Cascade International. Ohio trying to figure out what acceptable cycle time ranges are. Looking for documentation on this or resource requirements for vehicles. Iowa has system in place—will send Diana info. A professor at the University of Missouri at Columbia will start a research project on developing an integrated systems optimization-based approach to address asset management. Iowa says a lot of route optimization work well like for UPS but different issues w/ snow removal.
- Ohio doing lots of training—highway technicians academy to cross train people. Diana wrote snow removal course that worked well. Ohio could share their training materials—huge number of courses developed. Training with RWIS, weather training, integrating RWIS into operations, surveyed users to see how well working.

Tom Martinelli (Wisconsin)

- Scheduled four winter operations workshops around state last year to roll out CBT training. Gave copies to district offices and county highway departments. Gave suggestions for use but didn't mandate. A couple weeks ago Tom asked for feedback. Expecting comments back tomorrow. So far he's heard that people have been too busy to really put the training to use.
- Weather forecast contract. Mike Adams does verification report for weather forecasts vs. actual conditions. He came up with statistics on reliability. Over last four winters, forecast accuracy gone downhill. Now looking at rebidding forecast contract. Got bids back in May—3 bidders. Have been using SSI. Meridian and Meteorlogix submitted bids The scoring was close and asked all to submit best and final offer. Selected Meridian.
- Every other spring Wisconsin does road condition survey with State Patrol troopers on performance the previous winter. Ask to rate the road conditions in general in their county. Three-fourths of troopers think they're doing okay. Tom puts together a report and sends to districts to share with counties and addresses any specific comments with counties. But WisDOT hears the same comments every year and is wondering about long-range value of survey. Tom has copy of report and can provide, along with Mike's verification study to everyone.
- Anti-icing survey this spring with the counties. In general, they're satisfied. Some experience with slipperiness right after application.
- WisDOT has used a winter severity index since 1997/98. Had funding reserve intended to use to pay for bills for areas with extra hard winter, but no more funds. Level of service model takes all maintenance activities and figures out unit cost to do activity and figures out bottom line of spending on maintenance versus how much budgeted. Use to allocate money to districts. Now complaints from northern districts about not getting enough extra for their winter maintenance. Trying to improve accuracy of severity index, based off storm reports which can be fudged. Trying to automate collection of weather data by county but not enough weather reporting stations now. Kansas is doing this and maybe can learn from them.
- Winter operations workshop got good response on evaluations. Now will make annual affair.
- WisDOT just reorganized so now 5 regions—5 workshops planned. Focus this year on maintenance manual, current issues with RWIS and weather service. Last year highlighted snow fence options.
- In Kansas they bring in 1/3 of employees at a time for winter so do same training over three years.
- In processing of developing another annual winter maintenance report that pulls together all data across state on snowfall, winter maintenance activities, materials usage, etc.

Ben Zwart (Minnesota)

- Ben's group is struggling with and focusing on implementation of their winter maintenance research results. He has his own budget and will be putting more of it toward implementation.
- Project: AutoFlagger—approved by FHWA. One operator can operator off right of way to save lives.
- Developed new implementation plan
- Ben distributed the Maintenance Research Unit Section Statewide Biannual Report 2003-2005, which describes all research projects conducted by winter maintenance group in last two years.
- Concrete cutoff saw implemented. Plan to buy new pumps to prevent sludge in tanks using implementation dollars.

- Other research within MnDOT:
 - Study of flashing light patterns and colors on back of trucks to improve visibility of trucks for other drivers.
 - Looking at ideas for new trash machine to pick up garbage along median.
 - Study on friction meters.

Wayne Lupton (Colorado)

- Wayne showed pictures of a range of trucks used in Colorado.
- Etnyre has air temperature activated spray system.
- Dennis Burkheimer recommended looking at military surplus as source of trucks. Colorado buying new from Monroe.
- Tried out tankers and prewet systems but buying mostly combination units to use either mag or sand.
- Going to 14-foot plow in Denver area. No down pressure plows.
- Looking at lights on plow wings that will work and be visible. Saw “Christmas light” string on a plow in Minnesota but not since or from vendors. Could change light colors.
- Colorado has had good luck with LED lights.
- Maintenance Decision Support System (MDSS pooled fund)
- Enterprise Resource Planning System—getting rid of legacy computers and going to one system in maintenance management. Flowcharting system now and planned. \$2.8 million computer program. Will have AVL with barcode readers in trucks for automatic payroll and inventory information. Automatic wireless download at shops. Concerned won’t get support in first two years to put in trucks.
- Putting in containment systems for liquid sites. Dealing with environmental cleanup and new storage to avoid contamination.
- State law requires all trucks to be equipped with tarps. Not used on sanders.
- Truck rodeo in each section. Doing post trip/pre trip as part of competition. Huge failure rate on test so emphasizing. Truck rodeo used for training and is required. CDL book provides content for written test.
- Colorado has a training academy that all maintenance employees go through every year—1 week for veterans, 2 weeks for new hires.
- Trying to tune into needs of people and legislators. Increased number of supervisors. Putting together supervisor training class.
- Never did anything with the computer based training. Updated in last 4 months for Colorado. Will show demo and hope to start up this fall. New personnel rules in place so that if they complete trainings, then they’ll get 10% raise after first year. Retention problems and trying to improve training—give experience hands on before setting loose to plow.

>Action Items

Dennis Burkheimer: Send an electronic copy of today’s PowerPoint presentation to meeting participants.

Dennis Burkheimer: Send results of operator survey to meeting participants.

Dennis Burkheimer: Send information about Iowa’s resource requirements for vehicles to Diana since Ohio is trying to figure out what acceptable cycle time ranges are.

Tom Martinelli: Send electronic copy of trooper survey results to everyone, along with Mike Adams’ verification study.

Ben Zwart: Send electronic copy of research implementation plan.

CTC & Associates: Post appropriate TAC documents on the Clear Roads Web site.

Joint Meetings and Marketing Strategies

The TAC discussed the importance of partnerships with other pooled funds or organizations. Clear Roads has a standing update spot on the Aurora agenda. Use it to update them on current Clear Roads activities.

Dennis Burkheimer agreed to promote Clear Roads at Eastern Snow Conference. These states may be interested in joining because of benefits of calibration project to their programs.

Idea emerged for submitting articles to publications like Better Roads about Clear Roads projects and research focus. Kim will work with Tom on ideas and try to get an article out this fall.

>Action Items

CTC & Associates: Update Clear Roads brochure with based on discussions at this meeting. Dennis Burkheimer will take to snow conference in September.

CTC & Associates: Update and email updated Clear Roads PowerPoint presentation to Dennis Belter for use at upcoming meetings.

Diana Evans: Talk to Joe Doherty about Clear Roads membership possibilities for New York?

Tom Martinelli and CTC & Associates: Look into publication options for Clear Roads articles, determine themes and create drafts for submission.

Tom Martinelli: Talk to Arizona and California DOTs about Clear Roads membership.

Clear Roads Administration

Kim provided an overview of administrative activities performed by CTC & Associates LLC for the pooled fund over the last several months and described the new procedures developed in Wisconsin for handling commitments and obligation payments.

TAC members appreciated the organization of materials for use at the Clear Roads meetings and discussed how best to present materials in the future. The group agreed that Kim would provide new, larger binders intended to hold many meetings worth of information and would provide hole-punched, organized materials to add to the existing binder at each meeting.

The group discussed the facilities for this meeting and the desired location for the next face-to-face meeting in January/February. The Concourse worked very well this time, and Madison is particularly great to visit in the summer. Kim is going to compare the costs of this meeting in Madison with the previous meeting in Minneapolis. Unless it was much more expensive to hold the meeting in Minneapolis, the next meeting would be in Minneapolis, with the idea of holding the winter meeting in Minneapolis and the summer meeting in Madison. As Clear Roads gains new members from around the country, the meeting location would again be addressed.

>Action Items

CTC & Associates: Review costs of Madison and Minneapolis meetings and share with TAC.

CTC & Associates: Create large binders for use by TAC members beginning with next face-to-face meeting.

CTC & Associates: Work with WisDOT purchasing and FHWA-Wisconsin to implement the new pooled fund billing procedures on behalf of Clear Roads.

All Clear Roads members: Submit travel expenses for reimbursement using Clear Roads form previously provided.

CTC & Associates: Process travel reimbursement requests from TAC members.

Next Meeting

The next meeting will likely be a conference call in August to discuss the revisions to the Blackburn work plan for the calibration project. Further meetings related to this project will be determined by the TAC as the project work plan is finalized. The TAC will for sure meet again in person next January or February with the hopes of considering new research projects to fund.

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