



MINUTES

Clear Roads 2013 Technical Advisory Committee Spring Meeting:

Pooled Fund Project #TPF-5(218)

Tuesday- Thursday, May 7-9, 2013
Snow King Hotel – Jackson, Wyoming

Attendees:

David Frame, California DOT	Justun Juelfs, Montana DOT	Allen Williams, Virginia DOT
David Wieder, Colorado DOT	Mike Mattison, Nebraska DOR	Monty Mills, Washington DOT
Ron Wright, Idaho DOT	Mike Lashmet, New York DOT	Jeff Pifer West Virginia DOH
Tim Peters, Illinois DOT	Caleb Dobbins, New Hampshire DOT	Mike Sproul, Wisconsin DOT
Troy Whitworth, Kansas DOT	Larry Gangl, North Dakota DOT	Cliff Spoonemore, Wyoming DOT
Brian Burne, Maine DOT	Scott Lucas, Ohio DOT	Mark DeVries APWA
Justin Droste, Michigan DOT	Patti Caswell, Oregon DOT	Gabe Guevara, FHWA
Tom Peters, Minnesota DOT	Daryl St. Clair, Pennsylvania DOT	Colleen Bos, CTC & Assoc.
Tim Chojnacki, Missouri DOT	Joe Baker, Rhode Island, DOT	Pat Casey, CTC & Assoc.
	Lynn Bernhard, Utah DOT	

Materials Distributed

Clear Roads Budget Overview
 2013 Research Proposals
 Understanding Porous and Permeable Pavements – Contact Descriptions
 Implementation Status Report
 Peer Exchange Agenda
 APWA Training Proposal
 Hot Button Topic Discussion: GPS/AVL Technology: Questions for Discussion
 Road Weather Management Certificate Flyer
 Road Weather Management Best Practices – Version 3.0
 Guidelines for Disseminating Road Weather Messages

Tuesday, May 7, 2013

Introductions and Meeting Objectives

Chairperson Cliff Spoonemore kicked off the day with introductions of all attendees and a review of objectives:

- To select new projects for funding and RFP development, and;
- To update each other on the status of research and partnership projects.

Cliff welcomed the Joe Baker from Rhode Island DOT who was attending for the first time. He welcomed Patti Caswell from Oregon DOT, who attended as a guest and Mark DeVries, who represented the APWA. He also welcomed back Pat Casey of CTC & Associates who had not attended since 2006.

Clear Roads Budget

Colleen Bos provided an overview of the Clear Roads budget, including amounts committed and obligated, amounts contracted, and estimated planned expenses. Clear Roads has approximately \$715,764 to spend on research this year.

Discussion and Ranking of Research Proposals

Each Clear Roads member who had proposed a project to be considered for funding in 2013 described the goal and scope of their proposed project. The entire group discussed the merits of each proposed project and then submitted individual rankings to determine funding selections. See the table at the end of this document for the details of the discussions that took place.

David Wieder moved to approve the six projects below for funding using \$645,000 of the available funds. Justin Droste seconded the motion, and the TAC voted unanimously in support. The name(s) underlined for each subcommittee indicates the project champion.

2013 National Winter Maintenance Peer Exchange

Subcommittee: Allen Williams and Monty Mills

Funding: \$40,000

Determining Effectiveness of Salt Neutralizers in Limiting Corrosion on Winter Maintenance Equipment/ Best Practices for the Prevention of Corrosion to DOT Equipment: A User's Manual

Subcommittee: Monty Mills, Justin Droste, Tim Chojnacki, Ron Wright

Funding: \$50,000

Developing Test Bed Software to Qualify Plug and Play Technology

Subcommittee: John Scharbillig, Dave Wieder, Allen Williams, Monty Mills, Scott Lucas

Funding: \$30,000

Snow and Ice Control Environmental Best Management Practices Manual/ Assessment of the Comparative Environmental Impacts of Various Snow and Ice Control Strategies and Materials

Subcommittee: Brian Burne, Monty Mills, Lynn Bernhard, Caleb Dobbins; Joe Baker; Justun Juelfs, Ron Wright

Funding: \$200,000

Understanding the Effectiveness of Non-Chloride Organic Deicer Performance/ Identifying Characteristics, Benefits, and Mechanisms of Commonly Used Agricultural and Mineral By-Products in the Deicer Industry

Subcommittee: Mike Mattison, Larry Gangl, Ron Wright, Mike Lashmet

Funding: \$200,000

Cost Benefit Analysis of Various Winter Maintenance Strategies

Subcommittee: Ron Wright, Justun Juelfs, Allen Williams, Mike Mattison

Funding: \$125,000

>>Action Items

- CTC & Associates: Follow up with members of the subcommittees to start scoping projects.
- FHWA: Gabe will check with the FHWA to see if there is a mechanism in that agency to address the proposed project on Standardization of Traction Devices.
- Lynn Bernhard: Lynn will send the group a report on simulator training per the discussion regarding that proposal.
- CTC & Associates: Colleen will send Mark DeVries a request to bring the Developing a Training Video/Manual for Best Practices and Techniques in Clearing Different Interchange Configurations and Other Geometric Layouts to SICOP to see if they will add a segment on that topic to the CBT. She will also ask Dave Wieder to bring it up with the AASHTO SCOM.

- CTC & Associates: Colleen will ask Steve Lund to bring up the Mitigating Snow Squall Traffic Accidents project at the AASHTO SCOM Safety and Reliability group. Steve could get Paul Pisano involved as well.

FHWA Update

Gabe Guevara presented an update on FHWA activities of interest to Clear Roads.

- The Consortium for ITS Training and Education and the FHWA Office of Operations are offering a training program that leads to a Road Weather Management Certificate.
- FHWA has been documenting Road Weather Management guidelines and best practices across the US.
- The Virginia DOT is going to be leading a pooled fund in support of the connected vehicle project.

APWA Update

Mark DeVries provided an update on APWA and their winter maintenance program.

- APWA membership is rising with lots of cities, states and counties rejoining who had left APWA during the economic downturn.
- The APWA is planning future meetings and attempting to partner with related entities so they can broaden their audience.
- They are making their “Click, Listen and Learn” webinars more freely available to members and they have seen participation rise.
- They are recruiting winter maintenance articles for the APWA Reporter. Articles are due in August.
- The APWA Congress is their biggest event. It will be held in Chicago this year and the focus is on Winter in Politics. If any Clear Roads members have issues with legislators that they’d like to present for discussion, they are welcome.
- APWA is also working on their Train the Trainer program for the APWA snow and ice training

Wednesday, May 8, 2013

Idaho State Report

Ron Wright shared an overview of his agency’s activity for the last year. Highlights included:

- Idaho has invested in Winter Information Systems..
- They are piloting an AVL/MDC program.
- They have also focused on a bridge deck protection program.
- Idaho is working on level of service and customers service initiatives.
- They are conducting synthesis research on salt impacts, such as wildlife collisions, environmental impacts and corrosion.

Research Update: Understanding the True Costs of Snow and Ice Control Operations

Brian Burne reviewed the progress on this project.

- There were challenges in gathering data, because of the different ways that each state tracks data. A key take away from the effort was that most states are not capturing sufficient detail to allow Parsons Brinkerhoff (PB) to do the analysis they needed to figure out the true costs.
- It was not possible to develop a good top-down analysis approach.
- Instead PB developed a bottom-up approach that calculates projected costs for storms and allows comparisons between what you expect it to cost and what it actually does cost.
- Brian demoed the tool that PB developed.
- Next steps for the project include reviewing the final report and having a final presentation regarding the results.
- PB had proposed some additional tasks for the project, but the TAC agreed that it did not make sense to proceed until they had time to use the Phase 1 tool for a while.
- States will need to start collecting data differently in order to make a more robust tool and have more thorough comparisons.

Partnership Project Update: Computer-Based Training

Cliff Spoonemore shared an update on the Computer Based Training (CBT) project.

- The CBT does not require that agencies have a Learning Management System (LMS) in order to provide access.
- Funds for the web-version of the CBT were approved by each state maintenance engineer at the AASHTO SCOM meeting, so each state should be able to get access.
- There had been some misunderstanding about Clear Roads past funding of the CBT and the resulting access for member states. The group agreed that Clear Roads should make sure there is a written understanding about what Clear Roads is eligible to receive when it donates funds to partners for projects.

Research Update: Development of a Totally Automated Spreading System

Cliff Spoonemore updated the group on the Development of a Totally Automated Spreading System project.

- Thompson Engineering has completed the surveys for this project.
- There are pieces of automated spreading technology available, but there are no complete systems on the market.
- Thompson is drafting guides on how to implement the technology.

Allen Williams and Mark DeVries mentioned a contact in Lincolnshire, UK that may have an automated spreading system. Mark will send the contact information to Thompson Engineering.

>>Action Items

- Mark DeVries: Send UK contact information to Greg Thompson.

Research Update: Environmental Factors Causing Fatigue in Snowplow Operators

Allen Williams provided an update on the Environmental Factors Causing Fatigue in Snowplow Operators project.

- Virginia Technical Transportation Institute (VTTI) instrumented 2 trucks to get detailed information on blink rates and other measures of driver fatigue.
- Drivers also wore wristbands to measure activity and heart rates that will be matched up to the in-cab video and other data collected.
- The winter did not provide a lot of storms that required extended hours, which would have been optimal for data collection, but they did gather data most of the winter. They are analyzing the data to see if it's sufficient.
- The operator and supervisor survey was piloted with VDOT and is about to be distributed to all the Clear Roads states. The subcommittee has guided VTTI to focus on surveying for variables that DOTs can influence.
- VTTI will be contacting each Clear Roads TAC member to request their help in getting broad distribution of the survey.
- Ideally most of the surveys will be filled out online, but paper copies with SASE envelopes can be utilized as well.
- The survey should take about 15 minutes. All responses should be voluntary and will be kept confidential.

Research Update: Comparison of Materials Distribution Systems

Justin Droste updated the group on the Comparison of Material Distribution Systems project.

- A survey for this project has been posted and distributed. The TAC is requested to help forward it to the right respondents in each agency, such as the fleet or equipment manager.
- Depending on how Phase 1 turns out, there are still plans to consider a Phase 2 field testing project in the future.

Research Update: Establishing Effective Salt and Anti-icing Application Rates

Monty Mills described the status of the Establishing Effective Salt and Anti-icing Application Rates project:

- This topic was ranked high at each of the past 3 winter maintenance peer exchanges.

- The goal is to update the TE 28 and NCHRP 526 guidelines with all the new products that have come out.
- The project is just getting under way, and there will be surveys/ interviews taking place shortly.
- The results will also focus heavily on technology transfer tools to make sure new findings are easily understood and implemented by agencies around the US.

Ohio State Report

Scott Lucas shared an overview of his agency's activity for the last year. Highlights included:

- ODOT stopped using abrasives across the whole state. This has caused some increase in salt because staff are used to seeing a certain volume of material coming out of their trucks.
- They are updating their fleet, so they are not maintaining as many back-up trucks.
- They are implementing more tow plows.
- Ohio has begun contracting out lower level maintenance tasks.
- They are revising their application guidelines.
- They are implementing air foils for their lights.
- ODOT is conducting research on the following:
 - Field testing liquid deicers;
 - GPS/AVL research with the University of Akron;
 - Loader scales;
 - An EPOKE system.
- Their future program goals include looking at updated performance measures using RWIS and traffic speed information to generate a composite score to assess recovery time after the storm.
- Ohio received an APWA Excellence in Snow and Ice Award in 2013.

Research Update: Snowplow Operator and Supervisor Training

Mike Sproul reviewed the status of the Snowplow Operator and Supervisor Training project, which was funded in 2012, but has not gotten underway.

- The subcommittee had developed an outline and scope for the training project last summer.
- Last fall, the subcommittee also heard about a similar effort by the APWA and contacted them to see if we could utilize the training they had developed.
- The costs were between \$87,000 and \$127,000 for Clear Roads to license their PowerPoint and materials.
- Since most states could already send staff to the APWA training at the cost of \$500 per person, it didn't seem to make sense for Clear Roads to license it separately.
- However, the APWA could probably not meet all the training needs of all the member states, so the subcommittee will continue developing a scope for creating Clear Roads training for operators and supervisors.

Research Update: Understanding the Chemical and Mechanical Performance of Snow and Ice Control Agents on Porous or Permeable Pavements

Mike Lashmet reviewed the progress on the Understanding the Chemical and Mechanical Performance of Snow and Ice Control Agents on Porous or Permeable Pavements project.

- Western Transportation Institute (WTI) is just getting started.
- They are synthesizing available information on porous and permeable pavements and then will recommend which ones to include in the study.
- The next step will be interviews, and WTI will be contacting the Clear Roads members to help WTI identify the right contacts at each agency.
- Mark DeVries mentioned that he could provide some APWA contacts as well.

>>Action Items

- CTC & Associates: Let WTI know that they can also contact Mark DeVries to identify additional experts to interview.

Research Update: Determining the Toxicity of Deicing Materials

Monty Mills and Ron Wright provided an update on the Determining the Toxicity of Deicing Materials project.

- The subcommittee is satisfied with the results so far, although one material did require retesting due to dilution issues.
- Ron reviewed the initial results for the TAC.
- Bob Edstrom from MnDOT has been serving on the subcommittee and has been very helpful in reviewing results.
- The subcommittee is awaiting the final results and then will work with Barr to determine how best to present them.

The group agreed that it will be helpful to collect deicing material specifications from all Clear Roads members to post on the Members Only section of the website.

>>Action Items

- CTC & Associates: Email the TAC to collect their deicing material specifications and post them on the Members Only section of the website.

PNS Update

Monty Mills and Ron Wright updated the TAC on the activities of the Pacific Northwest Snowfighters (PNS).

- PNS has worked with CTC to update their website, where the partnership with Clear Roads is prominently displayed.
- They have also added additional resources to the website.
- The next meeting of PNS is in June in Cour d'Alene, Idaho.
- Ron reviewed the often-misunderstood issue that meeting PNS specifications does not necessarily mean that a product is on the Qualified Product List.

Virginia State Report

Allen Williams shared an overview of his agency's activity for the last year. Highlights included:

- The state eliminated its gas tax while raising sales taxes and imposing a tax on wholesale fuel
- VDOT has seen a large increase in their winter maintenance budget over the last 4 years. The amount of equipment they own has decreased by 1,276, while the amount of contractor equipment has increased by 3,392.
- They are providing near real-time plowing information on their public website.
- VDOT is partnering with VTTI on a tire slip measurement research.
- Their future goals include:
 - Updating their Highway Emergency Response Team
 - Establishing metrics for snow removal operations
 - Outfitting their fleet with vehicle location and data collection ability

Research Update: Cost-Benefit Toolkit Presentation

David Veneziano presented on the completion of the Cost-Benefit Toolkit: Phase II.

- Phase II added an additional 10 items to the original toolkit, which was completed in 2010.
- He outlined the tasks involved in the project: software enhancements, surveys, literature review, adding the new topics into the toolkit, providing user documentation and training, and creating a final report.
- He reviewed the various enhancements and the assumptions underlying their cost-benefit analysis.

Cost-Benefit Toolkit Training

David also presented training videos on the Cost-Benefit Toolkit. The videos covered the following:

- General Toolkit Features
- Creating a Tailgate Versus Hopper Spreaders Analysis
- Creating a Spreader Calibration Analysis
- There is an additional video on Setting up a User Account that is available if the TAC needs it.

Afterward the group discussed aggregating all the states data from the cost-benefit toolkit, although there were some concerns about the cost of housing a large volume of data. Colleen agreed to talk to CTC about the logistics and costs of housing or extracting that data. This could also be part of a Phase III project.

>>Action Items

- CTC & Associates: Develop a cost estimate for housing the Cost-Benefit Toolkit if all member state data was collected and stored in the toolkit.

Wyoming Avalanche Report

Jamie Yount presented on the WYDOT Avalanche Program:

- WYDOT has been making big investments in technology to support its avalanche program.
- He reviewed the history of innovations in avalanche control over the decades.
- They are moving away from heavy artillery in favor of triggering smaller slides that are more quickly cleaned up.
- These changes are leading to safer roads and shorter closures.
- WYDOT is also investing in building snow support structures in key areas
- The Glory Bowl is one of their major avalanche sites and WYDOT took the TAC on a field trip to view it and provide context to their use of new technology, such as the Gazex Exploders.

Thursday, May 9, 2013

Maine State Report

Brian Burne shared an overview of his agency's activity for the last year. Highlights included:

- Maine has realized significant cost savings by using anti-icing and by reducing their use of sand.
- Plow routes are also faster, because they are putting less material on the road.
- They are working on developing performance measures for reporting to management and the public.
- Maine is adding more tow plows.
- They are purchasing additional Stratos hoppers, which they have found cost much less to maintain than others.
- Maine is also investing in Polar Flex and other high performance plow blades.
- They have a new Maintenance Activity Tracking System (MATS).

Clear Roads Vice Chair Selection

The chair solicited volunteers to become the next Vice Chair of Clear Roads. Every two years, the Vice Chair takes over as Chair and a new Vice Chair is elected. Justin Droste volunteered to be Vice Chair and Justun Juelfs indicated a willingness to become the next Vice Chair in 2015.

Monty moved that the TAC approve Justin Droste as Vice Chair. Mike Mattison seconded the motion. The TAC voted unanimously to approve Justin as Vice Chair.

Status of Implementation and Technology Transfer Efforts

Colleen reviewed the status of implementation efforts.

- Progress has been made for most completed projects, although there are some that would benefit from technology transfer videos that did not get funded in 2013.
- The TAC would like to see if (with additional funding in the 2013-2015 administrative contract) CTC can help create some simple instructional videos to help support technology transfer efforts for some of the completed projects.
- The TAC established a subcommittee to work with CTC on these videos. The subcommittee includes: Scott Lucas, Lynn Bernhard, Tim Peters and Tom Peters.

Collective Purchasing Strategies

Lynn Bernhard reviewed his progress on identifying opportunities for collective purchasing contracts.

- Agency purchasing offices are hesitant about these collective contracts, because they would rather maintain direct control over agency purchasing activities.

- The group agreed that the potential for savings is good, so Lynn will continue to pursue options for ways to do collective purchasing.

Washington State Report

Monty Mills shared an overview of his agency's activity for the last year. Highlights included:

- He reviewed their budget measures for salt usage.
- WS DOT has continued to refine their AVL/GPS program for winter operations.
 - Worked with WSDOT IT to build their SQL-based platform in-house.
 - Most of their data is real-time, although for areas with spotty cell service, the trucks sync-up upon return to the maintenance building.
 - They use the system both for real-time tracking and also for looking at history data. It has helped them address legal challenges and supports performance tracking.
 - Their goal is to outfit all vehicles with AVL.
- Monty also reviewed their weather forecast tools. They are using Northwest Weather Avalanche Center for predictions of avalanche danger.

Aurora Update

Tim Peters reviewed the goals and background of the Aurora pooled fund, of which he is a member. He also provided an update on their research:

- They approved the following projects for funding in 2013:
 - 2013 Peer Exchange
 - Transition of Clarus to MADIS
 - Improving Estimation ... for Performance Measurement
 - Quantifying Salt Concentration on Pavement
 - Knowledge Base Content Management and Marketing
 - Make the Aurora Winter Severity Index Available to All
- Clear Roads and Aurora continue to collaborate on the wiki-style knowledge base.
- They have a Winter Severity Index that appears to be an extremely valuable tool.

The group also discussed the NOAA Memorandum of Understanding related to the transition from Clarus to MADIS, which was distributed by Paul Pisano. They would like Colleen to contact Paul to find out which states have not responded to him yet and let the Clear Roads group know which members still need to do so.

>>Action Items

- CTC & Associates: Contact Paul Pisano to find out which Clear Roads states still need to submit the MOU.

Montana State Report

Justun Juelfs shared an overview of his agency's activity for the last year. Highlights included:

- Montana is using more inhibitors in their brine.
- Doing new research on the best ways to handle sand and salt containment.
- They are also doing research on recycling sand.
- They have had problems with Big Horn sheep being attracted to the road and have been conducting a study with North American Salt Company (NASC) funding to try to deter the sheep from the salt. They are still evaluating the results.
- They build about 25 plows a year in house, which saves money and provides jobs.

Future Meetings

The group discussed where to hold the Spring and Fall 2014 meetings.

- Maine, Rhode Island and Missouri have all indicated a willingness to host.
- The group agreed that since we will have 2 west coast locations in 2013, we should have an east coast location in Spring 2014. Colleen will select between Portland, Maine and Providence, Rhode Island based on price.

- We will look at Missouri for fall 2014 and ask Tim Chojnacki if he has a preference between St. Louis or Kansas City.

>>Action Items

- CTC & Associates: Schedule the meetings, avoiding overlap with APWA, AASHTO or other meetings.

Hot Button Topic – AVL/GPS

The group agreed that this is an important topic that is of interest to a lot of states and should be given more time than was available on the agenda. The TAC would like to do an email survey regarding AVL/ GPS usage and then compile the results. The group would also like to add an hour to the Fall Meeting agenda so that Justin Droste can present on Michigan's experience since they will be implementing from scratch this year.

The survey will include the questions below, and Colleen will find out what additional questions people want to include in the survey:

1. Do you communicate in real time? What's the interval of data? Do you use WiFi
2. Do you display truck data for the public to see?
3. What are the life cycle estimates of your GPS equipment and sensors? (Do you move AVL equipment from one truck to another when a truck is retired/sold? Do you move the sensors as well?)
4. Have there been any instances where you quit using the AVL equipment? Why? What did you do with the equipment after you decided to no longer use it?
5. How are you using the AVL-GPS information? Are you feeding the information you get from the trucks into an MDSS?
6. Did your union have objections to this equipment on the vehicles?
7. Can you install GPS tracking devices on a state vehicle without informing the employee?
8. Do you install this on private trucks?
9. What other types of equipment do you have tracking devices on? Loaders, Motorgrader's, etc.

The group had a brief discussion of advice for Michigan regarding implementing GPS/AVL and the following points were highlights:

- Many states emphasize the value of getting references from other DOT customers when you are just getting started to learn about their experiences with each vendor.
- It's important to make sure you understand storage fees.
- You need to decide if you just want to know where the truck is at or if you want to get information from the truck.
- Operators like the radar maps in the truck. Drivers and managers also see benefit from camera images, which are saved for 3 days, unless they are flagged to be saved and then can be saved indefinitely.
- If operators are entering information make sure it's easy to use with big buttons on the screen.
- There have to be policies against entering information while moving. The software could be tied to speed so that it won't operate when the truck is moving.
- If you are going to be sending a lot of data (like photos), use a cellular service.
- If you don't need real-time data you can use wi-fi and pay a lot less.
- There are challenges with providing real-time information to the public, although that's an option once you have GPS/AVL.

>>Action Items

- **CTC & Associates:** Facilitate an email survey regarding AVL/ GPS usage and then compile the results. Also add an hour to the Fall Meeting agenda, so that Justin Droste can present on Michigan's experience since they will be implementing from scratch this year.

Proposal Evaluation

MnDOT's Contracts office would like to see Clear Roads change its proposal evaluation process. At the current time, each of the 26 member states participates in the meetings/ teleconferences to select vendors. MnDOT is finding the volume of people to be disruptive to a smooth vendor selection process. They are supportive of having all 26 member states review the proposals and provide input on the selection but would prefer that the scoring be completed only by members of that project's subcommittee. Their experience suggests that these would be the most knowledgeable and engaged members and that the volume of people would be more apt to provide beneficial scoring discussions.

There was considerable discussion about the requested changes. Here are some key points that were made:

- The Clear Roads Operating Procedures indicate that all members shall vote on all matters. There was some discussion about whether this applies to the scoring evaluations once a member has voted to select a project and then turned over the management of that project to a subcommittee. The group agreed that it probably needs to be clarified one way or the other in the Operating Procedures.
- There was some discussion about the process for selecting subcommittees (whether subcommittees should be voted upon; whether people feel confident joining all the subcommittees that interest them, etc).
- Some folks noted that they may care a lot about a particular project (though they don't have time to serve on a subcommittee) and would like their voice to be included in the evaluation meeting anyway.
- Everyone seemed to agree that all project scopes developed by subcommittees should be circulated to the entire TAC before they are put into RFPs.
- Everyone agreed that the full TAC should have the chance to review the proposals and provide feedback on them in advance of a scoring meeting.
- There were concerns raised about the MnDOT legislated rule that a MnDOT Manager must participate on the scoring committees, as this provides an opportunity for MnDOT to have more influence on vendor selections than other states do.
- Other suggestions included inviting the full TAC to participate in all selection meetings, but checking to see which states really want to participate, so that hopefully the resulting committee of volunteers was of a manageable size.

The full Clear Roads TAC will vote on revised Operating Procedure language, hopefully prior to the Fall meeting when the next round of proposals is up for review.

>>Action Items

- **CTC & Associates:** Summarize the issues and discussion and make sure the full TAC is aware of and can comment upon the issues.
- **CTC & Associates:** Organize a teleconference for the designated subcommittee of Dave Wieder, Cliff Spoonemore, Justin Droste, Mike Mattison, Tim Peters and Tom Peters to review the Operating Procedures and suggest language to clarify subcommittee selection, proposal scoring and other related activities.
- **Tom Peters:** Follow up with MnDOT leadership to share the concerns voiced and try to identify any leeway in terms of structure or timing to the new suggested evaluation process.

Clear Roads Research Proposals 2013

Prop #	Project	Proposer	Est. Cost	Notes
1.	Standardization of Traction Devices	David Frame, Caltrans	TBD	<p>Background</p> <p>Europe and Japan have a national standard for traction control devices. This could start with a state survey and possibly become a collaboration with the Society of Automotive Engineers.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • Is Clear Roads the right group to develop the standard? • Gabe Guevara will check with the FHWA to see if there are avenues to work through them or with the federal motor carrier division. • SICOP might also be able to do a synthesis on this.
2.	Determining the Best Method for Pre-treating Salt	David Wieder Colorado DOT/ Justin Droste, Michigan DOT	\$150,000	<p>Background</p> <p>Michigan has adopted pre-treating salt and would like to identify the best methods, looking at the mechanics of where, when, how and why. This could also include different types of materials.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • Would it make sense to integrate sand into this study's scope?
3.	Determining Effectiveness of Salt Neutralizers in Limiting Corrosion on Winter Maintenance Equipment.	David Wieder, Colorado DOT/ Justin Droste, Michigan DOT	\$125,000	<p>Background</p> <p>Different garages have different strategies for mitigating corrosion. Lots of agencies are looking to identify the best practices.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • This project was combined with #18 due to the overlap in scope.

4.	2013 National Winter Maintenance Peer Exchange	Annette Dunn, Iowa DOT	\$40,000	<p>Background</p> <p>Clear Roads has funded the 2007, 2009 and 2011 Peer Exchanges. This is a proposal to fund 2013 as well.</p>
5.	Developing Test Bed Software to Qualify Plug and Play Technology	Annette Dunn, Iowa DOT	\$30,000	<p>Background</p> <p>As part of the Plug and Play initiative, there is a desire to develop test bed software to verify the interoperability of spreader equipment. This project would fund the development of the test bed software.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • Can the software be developed for that amount of money, given the expense of programmers? • Who will write the specifications for the RFP process? • Spreader and AVL vendors have been involved in developing this concept. They helped develop the estimate of the cost and will also help write the specifications for the RFP.
6.	Cost Benefit Analysis of Various Winter Maintenance Strategies	Ron Wright, Idaho DOT	\$125,000	<p>Background</p> <p>The goal of the project is to analyze contrasting approaches in winter maintenance to help respond to routine questions related to balancing the priorities of mobility, safety and materials costs.</p> <p>A separate but related project would look at the environmental impacts and related costs and benefits.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • Could this tie into the Cost-Benefit Toolkit or the True Costs of Winter Maintenance project? • Ron Wright will look more closely at the Cost-Benefit Toolkit to see if it could fit. • Could the outcome from this include MAP21-style performance measures, rather than just pure cost-benefit analysis? • NCHRP 617 provides performance measures, so part of this project will be synthesis of existing recommendations and materials.

7.	Identify Sustainable Cost-Effective Snowplow Simulator Training	Troy Whitworth, Kansas DOT	\$75,000	<p>Background</p> <p>Some agencies use construction technicians as supplemental plow drivers, but they do not have a lot of experience driving dump trucks in bad road conditions. Nothing gives experience like being behind the wheel of the plow, but it would be helpful to provide them with hands-off experience via a simulator.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • Simulator training is expensive, though, and requires a good facilitator. • Utah has been involved in simulator training and has a report they will send to the group on their best practices. • Other agencies also mentioned good outcomes working with a local community college, because it can be in a central location and doesn't have the challenges of moving around.
8.	Snow and Ice Control Environmental Best Management Practices Manual	Brian Burne, Maine DOT	\$150,000	<p>Background</p> <p>Increasingly agencies are fielding questions on environmental impacts of winter maintenance strategies from people without much snow and experience. A high-level guide is needed to explain the existing best practice and provide support for those with links or references to more detailed research.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • This could almost be thought of as a “media guide.” • It could be an executive summary for the NCHRP Best Practices to Mitigate the Effects of Chlorine in the Environment. • The budget may be too high for an executive summary. • Oregon DOT has a guide that might help address this need.

9.	Development of Standardized Specifications (Part 1: Carbide Plow Blades)	Brian Burne, Maine DOT	\$15,000	<p>Background</p> <p>Just looking for some standardization between the Clear Roads member states. There could be Clear Roads specifications for given projects, or perhaps several versions per product. It doesn't have to start with plow blades. It could start with salt specifications.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • Is moving to a single specification realistic? • Are there concerns about developing dominant vendors? • The goal would not be to produce sole source specifications or suppress diversity of vendors. • Clear Roads specifications would be non-proprietary.
10.	A Reference Guide and Video on Proper Calibration Techniques.	Paul Brown/ Scott Wilson, Mass DOT	\$100,000	<p>Background</p> <p>This project would build on the original project, by creating step-by-step guides for all the different brands of close-loop spreaders. The video would be a complement to the guides.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • How many different combinations of equipment need to be addressed? • If this project is funded, the group should pick 3 or 4 basic spreaders. • Should we be working with manufacturers to get better instructions? • Although there are a lot of variations by manufacturer, a basic how-to video would still be helpful.
11.	Compare and Contrast the Effectiveness of Vertical and Curved (mop) Underbody Blades.	Justin Droste, Michigan DOT	\$150,000	<p>Background</p> <p>Some calibration videos already exist, but they may be outdated. The goal would be to assess the comparative performance of these two types of underbody blades.</p>
				<p>Questions and Discussion</p> <p>Phase I would look at the underbody and then a Phase 2 project could look at front nuts, wings, etc.</p>

12.	Developing a Training Video/Manual for Best Practices and Techniques in Clearing Different Interchange Configurations and Other Geometric Layouts.	Justin Droste, Michigan DOT	\$100,000	<p>Background</p> <p>Many agencies have more temporary staff and although they receive training, a video to supplement the training would be very helpful.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • This could be part of the CBT on plowing. • Mark DeVries could bring this request to SICOP. • Dave Wieder will also put it on the AASHTO SCOM agenda.
13.	Understanding the Effectiveness of Non-Chloride Organic Deicer Performance	Mike Mattison, Nebraska DOR	\$150,000	<p>Background</p> <p>Products like Beet Juice and Ice Slicer don't meet specification; however, the field assessments are positive and it looks fine in the lab. It would be useful to better understand how these alternatives work and get more information on their compositional content.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • This project overlaps with #14. • MnDOT may have some research in progress testing performance and freezing point, etc for all the products they use. They are looking at melt rates, longevity and weather variables. • It's also important to look at how the products evolve over time to understand consistency from year to year. MnDOT's project may not be addressing that aspect. • It would also be beneficial to look at environmental impacts and toxicity. • If this gets funded, Utah DOT would contribute up to \$100,000 to supplement the funding.
14.	Identifying Characteristics, Benefits, and Mechanisms of Commonly Used Agricultural and Mineral By-Products in the Deicer Industry	Mike Mattison, Nebraska DOR/ Monty Mills, Washington DOT	\$250,000	<p>Background</p> <p>This project was combined with #13.</p>

15.	Determining the Viability of On-Board Truck Scales	Scott Lucas, Ohio DOT	\$100,000	<p>Background</p> <p>Agencies are finding a lot of variation in the amount of product coming out of their spreaders and would like to better measure what is actually coming off the truck to track the distribution of salt. There doesn't seem to be consistency between the calibration and what actually comes out in a road test.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • There could be challenges with retrofitting trucks with these kinds of scales. • The group discussed other options, such as a flow meter off the back of the truck. • Could there be a feedback loop to the controller?
16.	Mitigating Snow Squall Traffic Accidents	Daryl St. Clair, Pennsylvania DOT	\$150,000	<p>Background</p> <p>Snow Squalls have been responsible for a lot of accidents and closures on state highways. Agencies would benefit from developing a protocol to get people off the roads for bad weather events.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • National weather service might also be able to help out with this project. • Are there National Incident Management System (NIMS) protocols for this? • Clear Roads will bring this up with Steve Lund for the AASHTO SCOM Safety and Reliability group. He could work with Paul Pisano as well.
17.	Assessment of the Comparative Environmental Impacts of Various Snow and Ice Control Strategies and Materials	Monty Mills, Washington DOT	\$200,000	<p>Background</p> <p>Legislators in many states are trying to ban the use of chloride deicers within most of the highway systems due to concerns about water quality. They often assume sand and other alternatives are harmless. Many states are trying to find ways to inform interested stakeholders about the comparative environmental impacts of chlorides and other alternative deicers. This study would provide the comparative information needed.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • A third-party study will be very helpful to the discussion. • Impact assessments could be tailored to different environments in different states

18.	Best Practices for the Prevention of Corrosion to DOT Equipment: A User's Manual	Monty Mills, Washington DOT	\$35,000	<p>Background</p> <p>This is the Phase 2 of the Prevention of Corrosion on DOT research. Phase 1 did all the research, so this is a smaller follow up project to create a guide.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • Is there any way to make it less geared towards Washington? • The user's manual would try to be generic to any DOT. • Change price to \$50,000 for the combined projects #3 and #18.
19.	Understanding the Impact of Chlorides on Deer and Elk Herds	Cliff Spoonemore, Wyoming DOT	\$75,000	<p>Background</p> <p>Look at whether animals are attracted to salt and if that causes a higher rate of deer/elk accidents. It is less of an issue in Wyoming, where they use a lot of sand, but it could be a concern if the amount of salt use increases.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • This is hard to test and quantify, because it's impossible to know what else the animal has consumed and when. • Colorado tracks road kill pick up, but they have not seen a correlation with salt application. • This project would need to determine what changes are possible once the causes are understood.
20.	Developing a Video to Communicate the Parameters for Effective Implementation of Liquid-Only Plow Routes.	Cliff Spoonemore, Wyoming DOT	\$20,000	<p>Background</p> <p>A technology transfer project to make a video to help inform people of the results of the project on liquid-only routes that was completed in 2010.</p> <p>Questions and Discussion</p> <ul style="list-style-type: none"> • It would be helpful to include feedback from states that have implemented liquid-only routes since this project was completed.