



## MINUTES

### Clear Roads 2018 Technical Advisory Committee Fall Meeting:

Pooled Fund Project #TPF-5(353)

**Monday - Wednesday, September 10-12, 2018 Sheraton West, Des Moines, Iowa**

#### Attendees:

Tom Renninger, Alaska DOT	Patti Caswell, Oregon DOT
Kevin Duby, Arizona	Jon Fleming, Pennsylvania DOT
Russell Modrell, California DOT	Joe Bucci, Rhode Island, DOT
John DeCastro, Connecticut DOT	Tony Ondricek, South Dakota DOT
Steve Spoor, Idaho TD	James Stevenson, Texas DOT
Craig Bargfrede, Iowa DOT	Ryan Ferrin, Utah DOT
Clay Adams, Kansas DOT	Todd Law, Vermont AOT
Brian Burne, Maine DOT	Robbie Williams, Virginia DOT
Scott Simons, Maryland, DOT	James Morin, Washington State DOT
Melissa Longworth, Michigan DOT	Jeff Pifer, West Virginia DOT
Tom Peters, Minnesota DOT	Alan Johnson, Wisconsin DOT
Todd Miller, Missouri DOT	Cliff Spoonemore, Wyoming DOT
Ty Barger, Nebraska DOT	Alex Calvillo, Oklahoma DOT
Brad Burge, Nevada DOT	Kevin Hensley, APWA
David Gray, New Hampshire DOT	Rick Nelson, SICOP
Mike Lashmet, New York DOT	Trond Michael Anderson, Norway
Larry Gangl, North Dakota DOT	Torgeir Vaa, Norway
Scott Lucas, Ohio DOT	Greg Waidley, CTC & Associates
	Valree Casey, CTC & Associates

#### Materials Distributed:

Agenda	TAC Contact List
Attendees List	2018 Research Proposals
Clear Roads Budget Overview	Project Subcommittee Members
	Research in Progress

### Monday, September 10, 2018

#### Welcome

Mark Lowe, Director of Iowa, DOT provided opening remarks and a welcome to Iowa.

#### Introductions and Meeting Objectives

Chairperson Brian Burne kicked off the day with introductions of all the attendees, a brief re-cap of the updates to TAC membership since the spring meeting, and a review of the objectives for day 1.

### TAC Members Transitions

- Maryland – Scott Simons replaces Sandi Sauter
- Virginia – Robbie Williams replaces Allen Williams
- South Dakota – Tony Ondricek replaces Dan Varilek (fall meeting only)
- Massachusetts – Mark Goldstein replaces Sam Salfity (not in attendance)
- Illinois – Frank Sharpe no longer rep. IL needs to name a replacement.

### Other Items of Note

- Gabe Guevara – FHWA (not in attendance)
- Kyle Lester – Colorado (not in attendance)
- Doug McBroom – Montana (not in attendance)
- Alastair Probert – Delaware (not in attendance)
- Frank Sharpe – Illinois (not in attendance)
- Alex Calvillo – Oklahoma (invited state)

## **TAC Discussions of the Proposals to the FY 2018 RFPs**

Thirteen proposals were submitted in response to the 7 RFPs posted by MnDOT. See below for the RFP titles and responses received.

- Mechanic/Operator Training for Upkeep of Winter Maintenance Equipment (18-01)
  - No proposals submitted

**Motion:** (Brian Burne) Convert this project RFP into a synthesis project to be conducted by CTC & Associates. Remainder of project funds allocated for this project will go back into pooled fund. Scott Lucas seconds motion. Motion passes.

- Improved Metrics and Scoring Criteria for Winter Maintenance Materials
  - Still scoping this project so the RFP will go out later than the other RFPs.
- Defensive Driving Training for Snowplow Operators (18-03)
  - Southern Illinois University
  - Virginia Tech
- Performance and Cost-Effectiveness of High-Performance Snowplow Blades (18-04)
  - University of Akron – Accepting this proposal.
- Evaluation of SSI and WSI and Most Reliable Variables for those Indexes (18-05)
  - The Narwhal Group
  - University of Nebraska
  - University of North Carolina
  - University of Vermont
- Review and Summary of Pre-wet Methods and Procedures (18-06)
  - SRF Consulting Group
  - Washington State University
- Specifications for Snowplow Route Optimization (18-07)
  - Axiomatic – Rejecting this proposal.
- Alternative Materials and Methods for Snow and Ice Control (18-08)
  - Braun-Intertec
  - Washington State University
  - WTI, Montana State University

### Changes to Subcommittees:

18-03: Out – Frank Sharpe and Allen Williams. In – Robbie Williams, Steve Spoor, and Kevin Duby.

18-05: Out – Frank Sharpe and Allen Williams. In – James Morin.

18-07: Out – Sandi Sauter. In – Scott Simons, Ryan Ferrin, and Bob Anderson (Anchorage, AK).

## **Roundtable Discussions**

In interest of space, the discussion associated with the following topics has been left off the minutes and can be accessed by contacting CTC & Associates.

### **Route Optimization**

Which states are involved at some level in route optimization? Discussion circled back to the proposal received for our FY18 RFP on Route Optimization. TAC not satisfied with the proposal received and believe it was influenced by the RFP not being properly scoped.

**Motion:** (Scott Lucas) Cancel the RFP, reject the current proposal, and re-scope the RFP. Second by Craig Bargfrede. Motion passes.

### **Regional Integrated Transportation Information System**

Todd Miller MoDOT is looking to develop performance measures based on this technology, which uses location from travelers' smartphones. Anyone else doing this?

### **Staffing**

Brian Burne A discussion was initiated regarding plow operators' pay and hours. This has been a hot button issue for states.

### **Heavy Snow Removal**

Tom Renninger Interested in partnering with other states to gain additional experience in heavy snow removal.

### **Use of Magnesium Chloride**

Todd Miller Interested in other states opinion on the effectiveness of MgCl.

### **Salt Reductions Programs**

Greg Waidley Do other states have a formal Salt Reduction Program in place that is implemented statewide and tracks its effectiveness.

### **AVL**

Brian Burne For those who have implemented AVL, have you found that it's worth your investment? Are you getting the data you need? Is the data reliable?

### **On-Board Truck Scales**

Scott Lucas Interested what other states think about on-board truck scales.

### **Mobile Brine Makers**

Brian Burne Have other states had success with mobile brine makers?

### **Insert V Box Bottoms vs. Tailgate Spreaders**

Todd Miller Noted during the peer exchange with Iowa that Missouri seems to be in the minority with regards to their use of Insert V Bottom Spreaders, whereas most other states seem to be using tailgate augers. Interested in knowing the preferences and experiences of other states.

### **Cameras**

Scott Simmons With more widespread use of cameras on plow vehicles, what is the feedback from the public?

## **Clear Roads Budget**

CTC presented the Clear Roads budget [TPF-5(353)] as of September 2018. This included a total anticipated income of \$1,775,000, and expenses of \$1,669,498.46, for a balance of \$105,501.54. Included within this balance is \$5,494 available for synthesis projects. Still need 2018 funds for: CA (2017), IL, MA (17 & 18), MN, OR, SD, VA, and WV.

## **Norway Presentations**

Presented by Trond

Three presentations:

- “Winter Maintenance in Norway”
- “NPRA Improvement Program”
- “Bevegelse – Better Road Operation and Road Maintenance to Get More Pedestrians and Cyclists”

## **Tuesday, September 11, 2018**

### **Research In-Progress Project Updates**

For each active project, the TAC reviewed subcommittee members and assigned new members as necessary. Non-TAC members will be kept on the list, but names will include an asterisk. They will still receive project communications at their DOT emails, as appropriate.

#### **13-05 Developing a Test Bed Software to Qualify Plug and Play Technology**

Presented by Scott Lucas

- Investigator: Parsons
- Subcommittee: Allen Williams\*, Paul Brown\*, Craig Bargfrede, Scott Lucas, Melissa Longworth, Brian Burne, Mark Trennepohl\*, Kevin Doby, Kevin Hensley\*, Clark Moe\*, Sheryl Weaver\*, Rick Meyer\*, and Larry Christianson\*, Gabe Guevara\*
  - Committee changes: Allen Williams is now retired, he can still be involved, but not a chair. Same for Paul Brown. Scott Lucas will be new champion and Craig Bargfrede is co-champion.
- Expected Completion Date: June 2019 (will need to be extended to allow for maintenance period)
- Expected Results: Clear Roads members will be provided with a software suite composed of the following three components:
  - The SQL Database. Stores test parameters and vendor/equipment information.
  - The Web Portal. Web application used by both vendors to initiate and complete the certification process, and Clear Roads members to administer and view lists of compliant equipment and test results.
  - The Device Test Application. A MS Windows Application that performs the actual tests on the device, provides feedback to the user, and communicates results to the SQL Database via the Web Portal on completion of the test. The Device Test Application installation package will be downloaded from the web portal by the vendors after the minimum required information as specified in the current Protocol Document has been entered.
- Status: The research team (Parsons) has provided the deliverables as part of completing the development of the software suite, which include design documents and test plans. The project subcommittee and research team met in late August to review the features of the web portal, which will be hosted by Parsons on the cloud until the end of the project and includes a year of maintenance and technical support. The subcommittee met with the vendor community to determine project need, given the delay in getting this project to contract. It is clear to the subcommittee that this need is still in place. The next

step is for Parsons to reach out to the vendors (contacts provided by Clear Roads) and begin pilot testing of the software.

Scott Lucas The goal of this project is to develop a software suite that will be used to validate and certify candidate spreader controllers and AVL equipment for compliance with the current Clear Roads Universal In-Cab Performance Specification and Communications Protocol.

Greg Waidley Current end date is June 2019. Parsons has a one-year long maintenance period, where they are there to help out with any technical issues that come along. Kick off last fall in October. Subcommittee did not have all of the answers for Parsons technical questions. Delayed project by 3 or 4 months. Should be extended to Dec 2019.

Patti Caswell When will the software be ready to incorporate into state's RFPs?

Scott Lucas As soon as it is all completed.

Patti Caswell Can States confirm that the software works. Can one talk to the other?

Scott Lucas There is a portal that Parsons has set up. More details to follow.

Greg Waidley We need to have a maintenance contract in the future. We spent an extra \$16,000 for the Cloud space as opposed to using their Duluth, Georgia servers. CTC cannot maintain it. We will need someone else to support (Parsons or other). Website is not visible to public.

#### **14-03 Developing a Training Video and Manual for Best Practices and Techniques in Clearing Different Interchange Configurations and Other Geometric Layouts**

Presented by Scott Lucas

- Investigator: Southern Illinois University Edwardsville
- Subcommittee: Justin Droste\*, Jeff Pifer, Scott Lucas, Paul Brown\*
- Expected Completion Date: October 2018
- Expected Results: A 15- to 20-minute video that showcases the most efficient pass sequences to properly clear various interchange and intersection layouts. Reference cards for quick and easy viewing patterns for different interchanges and a practice manual to include additional details.
- Current Status: Research team is finalizing the video and practice manual based on comments they received. Expect to have them completed and posted by end of September and the final webinar done by early October.
- Anticipated Implementation & Benefit Opportunity: The resulting videos should provide an easy way for agencies to train staff on the most efficient ways to clear challenging interchanges.

Scott Lucas Shared videos last year. Video editing. Finalizing practice manual. End of this month the PI will be ready for release the animations and practice manual. The final closeout webinar will be in October.

#### **15-01 Synthesis of Material Application Methodologies for Winter Operations**

Presented by Jeff Pifer

- Investigator: Washington State University
- Subcommittee: Jeff Pifer, Paul Brown\*, John DeCastro, James Morin, Monty Mills\*, Rick Nelson\*, Max Perchanok\*, Mark DeVries\*, Wilf Nixon\*
- Expected Completion Date: September 2018 (will need another extension)
- Expected Results: A key deliverable of this project will be a handbook that is succinct, decisive in its instructions and recommendations, and professionally created.
- Current Status: The guidebook and draft final report were provided to the subcommittee. An extensive review is still underway. This has already resulted on one major re-write of the guidebook with more content that still needs to be addressed. The research team and subcommittee met on 9/7 to discuss the extensive comments and to stress the need for overhaul of the guidebook (and final report).

- Anticipated Implementation & Benefit Opportunity: This handbook will provide winter maintenance professionals with the ability to access the needed information with ease and will be essential in driving successful implementation.

Jeff Pifer Going on for a while. Paul Brown was the leader on this project. Difficulties with this project in terms of getting what Clear Roads wants out of the guide and final report. Proposing another extension, which will be a minimum of 6 months. We now have them on board with what we need. Paul Brown has resigned from the committee and is now a consultant that will be assisting the research team with writing the guide and final report. Would like to create a Document you can lay now on the lunch tables for staff.

## **16-02 AWSSI Enhancements in Support of Winter Road Maintenance**

Presented by Brian Burne

- Investigator: Midwest Regional Climate Center at the University of Illinois
- Subcommittee: Brian Burne, Jon Fleming, Melissa Longworth, Mark Trennepohl, Tina Greenfield\*, Neal Hawkins\*
  - Kevin Hensley will be replacing Mark Trennepohl.
- Expected Completion Date: February 2019
- Expected Results: To acquire a tool that builds upon the current AWSSI by adding additional visual data representation tools to allow users to compare current and past winters, view projections, and expand the number of locations for which AWSSI is calculated.
- Current Status: Project was kicked off in May 2018. Since then the research team has worked with Clear Roads members to add more stations (52) to the tool (Task 1) as well as to add historical AWSSI years to the tools plots (Task 2). In addition, the research team collected winter maintenance cost data from 7 geographically dispersed states that the research team can use to look at the feasibility of tuning the AWSSI to road maintenance. They collected cost data on material, equipment, and labor by road maintenance district or region (whatever that state uses).
- Anticipated Implementation & Benefit Opportunity: Winter road maintenance costs can be correlated to the AWSSI at the end of a season or during the season, allowing users to monitor their costs as they relate to a particular winter. Because the AWSSI is a publicly available index, potential users are any and all public works or private entities who deal with winter snow and ice removal.

Brian Burne First task of this project added weather stations to the map based on state suggestions. Every state should have a new dot. Second, added historical years and can compare the different years for each state.

- Still working on: Reworking the formula for better snow and ice control. Take a look at how many storms occur and add that to the formula. They are going through data now.
- Also working on projection, as you get through half the winter you will get the best estimate for the end of the winter:

**ACTION ITEM:** CTC will schedule an October project update.

## **16-03 Identification of Mobile Technologies for the Assessment of Winter Road Conditions**

Presented by Cliff Spoonemore

- Investigator: SRF Consulting
- Subcommittee: Kyle Lester, Cliff Spoonemore, Frank Sharpe, James Morin, Allen Williams, Dan Varilek, Jakin Koll\*
- Expected Completion Date: April 2019
- Expected Results: Through rigorous testing of sensor equipment, the research team will develop a consistent standard from which values for each of the sensor manufacturers can be mapped. Then working from the standard parameter scales and an analysis of the relative contribution of each parameter to road conditions, aggregate a combined measure, with weighting of the different inputs as appropriate, to characterize road conditions as a single metric.

- Current Status: The final test plan was approved last fall. Phase 1 of benchmark testing and Phase 2 of live traffic testing are complete. Data analysis is complete. The standards, performance metrics, and guidance memo is being reviewed by the subcommittee.
- Anticipated Implementation & Benefit Opportunity: The guidance developed from this project will help in multiple aspects of winter maintenance – in the short-term for responding to a winter storm in real time, and in the long-term in making policy and planning decisions based on performance trends. It will also help practitioners avoid guesswork by providing guidance based on vetted equipment and reliable numerical standards.

Cliff Spoonemore Testing for portable sensors. Sensors were attached to pull behind trailers.

Patti Caswell Not a controlled environment?

Cliff Spoonemore Testing sensors are on the trailers to be pulled behind. Baseline sensors were permanently mounted on the test track. Can't put them on the live streets because they'll get hit by cars. Data came from test tracks.

Tom Peters What are the sensors they are testing?

Cliff Spoonemore There are four sensors: Air temperature, relative humidity/dew point, surface temperature, water film and friction.

**Action Item:** CTC will schedule an October progress update.

#### **16-05 Weather Event Reconstruction and Analysis Tool**

Presented by Brian Burne

- Investigator: The Narwhal Group
- Subcommittee: Brian Burne, Patti Caswell, Alastair Probert, Todd Miller, Tom Renninger, Jeff Pifer, Joe Bucci
- Expected Completion Date: January 2019
- Expected Results: The goal of this project is to allow transportation agencies to more quickly and easily reconstruct winter weather events, with a focus on drawing from data sources that cover the entire United States or large regions. Clear Roads expects that much or all of the data that agencies need are currently available online in some manner. However, these data may be difficult to access and use for a number of reasons. The project will identify easily usable data sources, and if part two is approved, build a user-friendly data retrieval interface upon existing sources.
- Current Status: Part 1 of this project (now complete) was to identify sources of data and develop a proposal for the tool. Part 2 is to develop the tool itself. In meetings with the subcommittee leading into Part 2, it was discovered that the funds initially budgeted to develop the tool were not enough. Therefore, the research team had submitted an amendment for an additional \$35,673.36 to build the tool with the added features. The TAC approved this at the Spring 2018 meeting and the subcommittee reconvened with the research team in early August once the amendment was in place to review a mockup of the tool and its added features.
- Anticipated Implementation & Benefit Opportunity: This project should alleviate the difficulties of obtaining or using available weather data either by identifying easily usable data sources or by building a user-friendly data retrieval interface upon existing sources. In either case, the project outcome should let agencies spend much less time finding and preparing data to let them move quickly to analysis and follow up. This has the potential to affect after-action activities and inform changes to practices at state, county and municipal levels of government.

Brian Burne We want to make things simple and easy to use. We want the states to be able to go to the website and run an inquiry. We have not had the opportunity to see this site in action yet though. This project should be finished at the end of the year and by spring meeting, we can run an inquiry to show how it works.

## **17-01 Integrating Advanced Technologies into Winter Operations Decisions**

Presented by Jon Fleming

- Investigator: SRF Consulting
- Subcommittee: Kyle Lester, Jon Fleming, Sandi Sauter, Todd Law, John DeCastro, Melissa Longworth, Brad Burge
- Expected Completion Date: January 2020
- Expected Results: Clear Roads is seeking a user-friendly Best Management Practices guide to the technologies available for winter maintenance operations; what these technologies measure; how to integrate them into a successful winter maintenance operations strategy; and recommendations on how to incorporate future technologies into the strategy.
- Current Status: The project team conducted their kick off call on September 5, 2018.
- Anticipated Implementation & Benefit Opportunity: This project will provide a systems-level guidance on the many new technologies available to evaluate road conditions in an integrated blueprint. Thus, this project will give state DOTs a better understanding of how to integrate these technologies into their winter maintenance programs.

Jon Fleming Kick off meeting Sept 5<sup>th</sup>. Kyle is the co-champion. What is the future of our technology? What is the next greatest thing coming? How do we use that data? What is down the road? Can we use that data and integrate in the long run?

## **17-02 Standard Specifications for Carbide Insert Blades**

Presented by Cliff Spoonemore

- Investigator: SRF Consulting
- Subcommittee: Cliff Spoonemore, Brian Burne, Ron Wright, Allen Williams, Tony McClellan, Clay Adams, Dan Varilek
  - Subcommittee lost three. Two more volunteers: Ryan Ferrin and Brad Burge.
- Expected Completion Date: January 2019
- Expected Results: A set of common standard specifications, including but not limited to the following:
  - Carbide inserts, geometry, and dimensions
  - Blade materials, assembly details, and dimensions
  - Plow blade configuration (front, underbody, or tow blade) and blade dimensions (length and height)
  - Quality assurance inspections and accept/reject procedures
  - Details of procedures to accept/reject inserts
  - Specifications will include text and AutoCAD details of insert dimensions, insert material, blade dimensions, and mounting details, including: bolt pattern and inside measurements, amount of insert inside a blade, and the blade/insert mounting configuration.
- Current Status: The literature search (Task 1) is complete. A technical memo was submitted that identified industry contacts and proposed survey questions for the industry survey (Task 2). That survey has been sent out and a draft set of results are due to be submitted to Clear Roads by September 2018.
- Anticipated Implementation & Benefit Opportunity: State DOTs currently specify a variety of carbide-insert blades, and having a common specifications used by many of the 36 Clear Roads states would simplify and streamline the procurement process for state DOTs and vendors. The buying power connected to a widely accepted specifications would be greater, and procurement coalitions could potentially use the standard specifications for bidding. In addition, if more agencies specified the same product, vendors could reduce their costs and pass those savings on to state DOTs. The standard specifications would provide a starting point for agencies that want to develop their own specifications. Counties and cities would also be able to take advantage of the specifications.

Cliff Spoonemore Kickoff meeting and literature search are complete. Collecting states' specifications and working with vendors with what they normally manufacture. Want to develop standard specifications for depth, size and shape.

Brain Burne SRF has sent the survey out. Each state needs to please fill out the survey. The following states need to complete the survey... AZ, CO, IL, IN, ME, MO, MT, NE, TX, VA, WA.

### **17-03 Aftermarket Cameras in Winter Maintenance Vehicles**

Presented by Todd Miller

- Investigator: SRF Consulting
- Subcommittee: Todd Miller, Russell Modrell, Dan Varilek, Alastair Probert, Craig Bargfrede, Kevin Hensley\*
- Expected Completion Date: October 2019
- Expected Results: The primary aim of added imaging capability is to assist with operational decisions and increase situational awareness. Clear Roads is seeking guidance in the form of a synthesis of current practices and existing data and test results as well as a compilation of lessons learned, best practices, considerations and recommendations.
- Current Status: The project team conducted their kick off call for this project in early August. The literature search has been drafted and comments received by the first week of September. Next, Clear Roads expects to receive a draft set of survey questions to be sent to Clear Roads members and industry.
- Anticipated Implementation & Benefit Opportunity: This project will assist with operational decisions and increase situational awareness for snowplow operators, thus giving state DOTs the best possible information for selecting and employing such cameras.
  - SRF would like specific contacts to send the survey to. This may tend to be a more niche group.

Todd Miller Kicked off project in late July. Asking all 36 states to complete the survey. Then reaching out to various manufactures. Wrap up around March 2019. Spring meeting will have a lot to discuss.

Cliff Spoonemore This project should also specific what else to purchase with cameras. If it is a wireless device, then we need to know which equipment to go along with each camera.

Greg Waidley

- Sending survey out. Is the TAC aware of any groups that SRF can send this survey to besides the member states? The following suggestions were made:
  - Check with APWA.
  - Check with camera vendors.
  - Look at John Deer rear-facing cameras on their trucks.

### **Clear Roads Synthesis Project Updates**

Presented by Greg Waidley

Three synthesis projects still outstanding.

- CR 17-S1: Accuracy of Deicer and Abrasive Material Application Equipment
  - Final report will be complete this week.
  - **ACTION ITEM:** CTC will post on website and notify TAC when complete.
- CR 17-S2 Use of Prewetted Solid Materials for Roadway Anti-icing
- CR 17-S3 Effective Snow and Ice Personnel and Equipment Management for Storm Activation
  - Drafts of both CR 17-S2 and CR 17-S3 will be complete by the end of the month. Drafts will be sent to subcommittees to be finalized by end of October.

### **Clear Roads-Pacific Northwest Snowfighters QPL**

Presented by Patti Caswell

Patti Caswell PNS is funded by Clear Roads. PNS is a partnership.

Tom Peters PNS was no longer a pooled fund as defined by FHWA.

Patti Caswell PNS will become an official project of Clear Roads included adding subcommittee members including Nebraska, New Hampshire, and Minnesota.

- Project subcommittee met via phone last week to further discuss the scope of the PNS under Clear Roads and how it might be accomplished. This will not be an overnight transition. It will likely take months.
- Changing the name.
  - Not ready for name change because of need to transfer web sites PNS website to Clear Roads.
  - Some of the documentation will need to be changed by adding Clear Roads and PNS.
  - Outreach to state holders will need to occur to let them know of name change.
  - Cliff Spoonemore In 2019, suggest removing PNS to just “Clear Roads QPL, formally known as PNS.”
  - James Morin Current contracts are using the name PNS.
  - Tom Peters Need a survey for name change.

Tom Peters One take away from phone call is, “How we are set up for our PNSs annually?” MnDOT will need to put in a line item for a new project that is approved for funding by Clear Roads.

- Suggestion is to have a standing item through Parliamentary procedures.
- Continue to set aside dollar amounts for PNS from Clear Roads.
- Contractually, it’s already in there. Cost to cost coverage.
- Actively have TAC members serve as subcommittee participants.

Patti Caswell PNS is planning on providing an annual accounting of how we are doing.

James Morin Still have lots to do: Improving our documentations, web updates, outreach to state holders, cleaning up the QPL and getting projects off the list. Setting up the testing contract.

Greg Waidley Setting up a project for this QPL through MnDOT as the lead state can be no more than 5 years. Add the money that has been approved at the 2018 spring meeting (\$60,000 for 5 years). Report out twice a year on activities. Need to work with MnDOT to determine how to document QPL processes, communicate with vendors, etc.

Greg Waidley Need to meet to discuss the web site. CTC will have set aside funds in our current administrative contract to move the PNS website to the Clear Roads website, so no need to pull those funds from the \$60,000.

James Morin The QPL function of PNS will come to Clear Roads. There is no connection to the PNS that meets biannually. That function is not be connected to Clear Roads and is funded by its own not-for-profit account.

#### **Related to the PNS Subcommittee...**

James Morin Wanted the membership to extend from one U.S. border to the other. Added two states. Can change year to year.

James Morin The subcommittee should handle the day-to-day operations. Any major changes should be sent out to the TAC.

#### **APWA Report**

Presented by Kevin Hensley (see presentation on members only portion of Clear Roads website)

- 2018 North America Snow Conference – Indianapolis.
- 2018 PWX – Kansas City.

- 2019 North American Snow Conference – Salt Lake City, May 19-22.
- 2019 Public Works Expo – Seattle, September 8-11.
- Winter Maintenance Supervisor Certificate
  - 2018 workshops still to come
    - APWA Western Snow & Ice, Loveland, CO, September 27-28.
    - Vancouver, BC, October 22.
- CLL: Click Listen and Learn. “Change--- Environmentally Driven - Cost Driven - Efficiency Driven - Politically Driven.” Presented October 19, 2017.
- Kevin Hensley (West Des Moines) will be the Clear Roads TAC representative. Bryan Beitzel (Buffalo Grove) will be the alternate.

## **FHWA Report**

Presented by Rick Nelson

- Every Day Counts: Initiating 5thRound (2019-2020) -10 innovations
  - To date: 4 Rounds, over 40 innovations
  - Weather-Responsive Management Strategies
    - Using Mobile and Connected Vehicle Data to increase the effectiveness of traffic operations and reduce costs associated with maintenance during adverse road weather conditions.
  - EDC-5 Coordinators & STIC Network <http://www.fhwa.dot.gov/innovation/stic/stic-contacts.cfm>

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## **SICOP Report**

Presented by Rick Nelson

- AASHTO's Winter Maintenance Technical Service Program.
- 37 states total at \$4,000 each.
- TRB Paper Award (Maintenance and Preservation Section Impacts on Practice Award in Winter Maintenance & Surface Transportation Weather), AKA the “Lee Smithson Award.”
- National Strategic Winter Maintenance Plan (3 year cycle of strategic issues from member states)
- SICOP Talks Winter Ops
  - 13 episodes produced
  - 1400 all-time plays
  - Subscribe on iTunes or Google Play
  - <http://SICOPTalksWinterOps.com>
- College level course work in maintenance management. Produce an AAS in maintenance management. Identifying various training to create the curriculum for the course. Modules for anti-icing. The training is 17 years old. Kyle is interested in migrating the CR materiel into the curriculum/training of AASHTO's TC3 program. Working with TC3 and are weeks away from moving the SCIOP modules to the TC3 website.
- State DOT have access to TC3 training videos. Will be available on TC3 site at no cost, including APWA. No restrictions. Two or three weeks time for winter operation trainings to be available on the web page. Computer-based modules will be available through the web site. If you have existing through your state, you don't need to modify.
- Need to know how long will this class take? What are the training requirements?

## **Proposed 2020 TRB Conference/National Winter Maintenance Peer Exchange**

- Call for expanded abstracts on topics defined by the planning committee. Don't need full research papers.

- Pre-record research briefing like in Pittsburgh, which frees up time for networking and states best practice reports.
- State Showcase Reports.
- TRB piece we would have a Poster Session. Author submitting or researchers to highlight their work and answer questions.
  - Showcase both CR and Aurora accomplished.
- Breakout sessions.
- Have a reception in the evening to network with industry.
- Need Clear Roads to approve their participation. Aurora is awaiting Clear Roads decision. TRB will participate if Clear Roads and Aurora (NWMPE sponsors) agree.

**Motion** (Brian Burne) For Clear Roads to support a combined peer exchange with TRB and Aurora. With the funding being the same. Clear Roads will pay for one participate from each state. Location will be central U.S. Second by James Morin. Motion passes.

**ACTION ITEM:** In the spring Clear Roads will approve a project and an amount of funding for this peer exchange.

## Recently Completed Projects

### **16-01 Utilization of AVL/GPS Technology: Case Studies**

Presented by Patti Caswell (see presentation on members only side of Clear Roads website)

### **16-04 Emergency Ops Methodology for Extreme Winter Storm Events**

Presented by Mike Lashmet (see presentation on members only side of Clear Roads website)

## Alternative Methods to Scoring Research Idea Proposals

Clay Adams Suggested there may be a better way to score proposals during the spring meeting and wanted to discuss this prior to our next spring meeting.

- Many states likely do not weigh the scoring of proposals in the same manner, in terms of need.

Brian Burne It might make sense to give everyone the same amount of points to use.

Tom Renninger Each state should have the freedom to give each project the points he/she would like. Why complicate the scoring?

Tom Peters MnDOT has a different system for the state research projects. For projects to qualify, they have to achieve a minimum score.

Clay Adams Don't think there is a problem with the scoring. But not everyone was using the full range 1-5 (best project should rank a 5).

Greg Waidley Other method, you get a certain amount of points to assign to all proposals. So, assuming 15 total proposals on average and perhaps 50 points.

Ty Barger Agree the systems works just fine. Alternative, rank them to 1-15.

Greg Waidley Would like to avoid ranking as trying to combine every member's ranking would be unnecessarily difficult. Besides, the scoring system that we currently have is supposed to result in a ranking of proposals by the TAC.

Brian Burne Log this discussion. We may talk about this again in the spring.

## **Penn DOT Alternative Deicers Research**

Presented by Jon Fleming (see presentation on members only side of Clear Roads website)

**ACTION ITEM:** CTC will post the Penn DOT Alternative Deicers research report on the CR site (members only page).

## **Iowa Dot Presentation Use Tracking**

Presentation by Tina Greenfield (see presentation on members only side of Clear Roads website)

## **Review of the Draft Winter Preparedness Microsite**

Greg Waidley and Brian Burne walked the TAC through the draft webpages.

- This is for public to use. Media, public, and driving schools have access to a handful of helpful information but this is intended to supplement that information. State DOTs can provide links to this site on their own website and direct the public to the Microsite. Saves the DOTs the effort and also adds to Clear Roads as a national resource for winter services.
- Clear Roads can add more videos, please feel free to send videos to Greg from your own personal sites.
- New Hampshire and Vermont need to be updated on 511. Southern CA has 511 but not northern CA.

## **AquaSalina**

Presented by Scott Lucas

Scott Lucas Deicer tested and none of the samples showed that Ra 226 or Ra 228 were at levels that would cause health concerns to the public when applied as a deicer.

Patti Caswell Clear Roads response to the person(s) inquiring, was that we would talk about this at the fall meeting. As the committee chair for PNS, Patti will respond saying the PNS specifications are all online. We are willing to provide more information.

Brian Burne Will send out a letter/email stating that CRs is not including this in the testing.

**ACTION ITEM:** Brian will send out his draft response to the TAC.

James Morin There are thousands of things we can test every year. Bottom line is we can't test for everything unless we have a compelling reason.

Mike Lashmet What are the sources of that material?

Scott Lucas Comes from salt brine layer, naturally grown underground.

## **Improper Use of Clear Roads and PNS Logos**

Todd Law Nature's Own Source is using Clear Roads logo on their web site and PNS logo. Does PNS or Clear Roads allow logo to be used by other entities?

Tom Peters This has come up in the past and we can request or demand the logo be taken down. We don't want it used as a form of advertising.

Valree Casey Pat Casey has stated (in a response to an email she just sent) that no entities should be allowed to use the Clear Roads or PNS logos, even if they are not trade marked. He also provided a link to a website that stated as much.

**ACTION ITEM:** CTC will draft a letter for Brian to send to Nature's Own Source.

## **2018 Clear Roads Research Implementation Survey**

Greg Waidley CTC sent out emails providing a link to the survey on July 13<sup>th</sup> and 30<sup>th</sup> of 2018. These are the names of the states that **have** replied to this survey: Arizona, Mass, North Dakota, Washington State, Alaska, Penn, Vermont, NY, Minnesota, Montana, New Hampshire, Utah, Delaware and Illinois. These states have submitted incomplete responses: Maryland, Iowa, Caltrans and Wyoming. Please complete the survey if your state was not called out or if your response is incomplete.

## **Wednesday, September 12, 2018**

### **Future Meetings**

#### Spring 2019

Reno, Nevada; April 16<sup>th</sup>-19<sup>th</sup>. Backup is Indianapolis, IN.

- Meeting is Tuesday, Wednesday and Thursday. Travel days of Monday and Friday.
- Casino-based hotels may be a problem for some States in terms of gaining travel approval. We will be targeting non Casino-based hotels.
- Moving the 2019 spring meeting a week earlier to provide more time for the RPF process. Originally set for April 23<sup>rd</sup>-25<sup>th</sup>.
- Will extend an invitation to Tennessee to attend.

**ACTION ITEM:** Greg will send out an updated calendar invite to the spring meeting.

#### Fall 2019

Burlington, Vermont. Backup is Maryland.

- Originally conducted meetings in early September but would like to move the date later in the month to provide more time for RFP process.
  - Target is the 4<sup>th</sup> week (3<sup>rd</sup> week as backup) of September (Sept 24<sup>th</sup> – 26<sup>th</sup>). Depends on hotel availability.

#### Spring 2020

- San Antonio, Texas is the target location
- Backup is Madison, WI.
- Date TBD.

#### 2019 TRB Annual Meeting

James Bryant is coordinating a maintenance-focused poster session at the 2019 TRB Annual Meeting. No Boundaries has already agreed to participate.

Greg suggested Clear Roads present posters on some recently completed, high impact projects. TAC agreed that it's a good idea to move forward with exploring the possibility to have project investigators to present at TRB.

There is no registration fee for state DOT employees to attend TRB. Tom Peters will be in attendance as well as Scott Lucas, who is on the committee for TRB.

**ACTION ITEM:** Greg Waidley will investigate cost for the PI and TAC member to attend TRB and will get a full TAC vote before we take any action.

### **Selection of Research Development Groups for FY2019 Research**

The following are the teams that will be developing the 2019 research proposals. The proposals coming out of this process will be considered for funding at the spring 2019 meeting in Reno, NV.

Group 1 South Dakota, Wisconsin, Wyoming, Idaho, West Virginia, Minnesota, Vermont

Group 2 Delaware, Alaska, California, Texas, Washington State, Rhode Island, Kansas

Group 3 Virginia, Maine, Pennsylvania, Maryland, Michigan, New Hampshire, Illinois

Group 4 Indiana, North Dakota, Colorado, Arizona, New York, Iowa, Missouri

Group 5 Nevada, Oregon, Ohio, Utah, Nebraska, Connecticut, Massachusetts, Montana

#### Recommendations for Teams

- 3 to 6 proposals per team
- Meetings to occur in January, February, and March (if needed).
- Come to the table for the first meeting with at least one idea.
- CTC will start scheduling meetings for each team in December.

### **Norway Report**

Presented by Torgeir Vaa (see presentation on members only side of Clear Roads website)

### **2018 FHWA Road Weather Stake Holder Meeting**

Kevin Hensley, David Gray and Todd Miller will be at the FHWA meeting on Sept 18, 2018. Todd Miller will do the presentation and has been sent the presentation by Greg Waidley.

### **Minnesota's Salt Sustainability Program**

Greg Waidley presented on the CTC-led effort of a Minnesota Salt Sustainability program. Greg also informed the TAC that CTC is helping design a potassium acetate study in Minnesota's District 1 (Duluth). CTC has hired Ron Wright as their subject matter expert. Will keep group posted with final details and results for both studies.

### **Roundtable Discussions**

In interest of space, the discussion associated with the following topics has been left off the minutes and can be accessed by contacting CTC & Associates.

#### **The Use of Lasers**

Ryan Ferrin Asking if other states use lasers outside the cab to tell if plows are up or down.

#### **High Performance Blade Testing**

Ryan Ferrin Utah DOT has performed plow blade study over the past two years. Will finalize report after the third winter and will release to Clear Roads and PNS. 34 maintenance stations are participating in this study with 80 blades total. Got results back from 39 of those blades, with 41 blades still out. Hoping to collect these 41 blades this winter.

### **Training Snowplow Operators – Validation of Certification**

Craig Bargfrede Due to a recent accident in Iowa with a snowplow operator, law suit has been filed. Iowa DOT has been tasked to put together a training certification program for their staff. Asking if other States have a program that Iowa can use as a backup for information to show how other states are using their proof of certification training.

### **Winter Severity Index**

Jon Fleming Would like to know if any states have a visual representations of winter severity.

### **Porous Pavements and Ice Control**

James Stevenson Texas has open grade friction course pavements and they use brine for pretreatment. However, with long storm durations, TX has to keep treating throughout the storm. Currently TX uses straight streams to apply brine, but thinking of going to fan spray. Are any other states using fan spray with porous pavements?

Texas winter maintenance quarters, open grade friction force. Go down on spray. Uses brine. PVC does its job. Long extended snowstorms. Freezing up again. Straight stream on the back of truck. Would like to convert to fan spray. TX is the biggest users of PVC.

### **Hydraulics vs. Cables**

Brian Burne In Maine, cables are still being placed on brand new trucks – front mounted. Has any state done a comparison of hydraulics vs. cables; pros and cons?

### **Slush Gates**

James Morin Noted that Western WA is more likely than the rest of the state to use slush gates and would like to know what experiences other states have had with them.