



## MINUTES

### Clear Roads 2019 Technical Advisory Committee Spring Meeting:

Pooled Fund Project #TPF-5(353)

**Tuesday – Thursday, April 16-18, 2018**  
**Hilton Garden Inn, Indianapolis, Indiana**

#### Attendees:

Tom Renninger, Alaska DOT	Melissa Longworth, Michigan DOT	Joe Bucci, Rhode Island DOT
Russell Modrell, Caltrans	Tom Peters, Minnesota DOT	James Stevenson, Texas DOT
John DeCastro, Connecticut DOT	Todd Miller, Missouri DOT	Ryan Ferrin, Utah DOT
Jason McCluskey, Delaware DOT	Doug McBroom, Montana DOT	Todd Law, Vermont DOT
Steve Spoor, Idaho TD	Leslie White, Montana DOT	James Morin, Wash State DOT
Mark Bloome, Illinois DOT	Ty Barger, Nebraska DOT	Jim Hughes, Wisconsin DOT
Jeremy McGuffey, Indiana DOT	David Gray, New Hampshire DOT	Cliff Spoonmore, Wyoming DOT
Craig Bargfrede, Iowa DOT	Joe Thompson, NYSDOT	Kevin Hensley, APWA
Clay Adams, Kansas DOT	Øystein Larsen, Norway	Roemer Alfelor, FHWA
Brian Burne, Maine DOT	Scott Lucas, Ohio DOT	Rick Nelson, SICOP
Scott Simons, Maryland DOT	Patti Caswell, Oregon DOT	Valree Casey, CTC & Associates
Mark Goldstein, Massachusetts DOT	Jon Fleming, Pennsylvania DOT	Greg Waidley, CTC & Associates

#### Materials Distributed

Agenda	Roles of Project Champions and Subcommittee Members
Attendees List	MnDOT RFP Development Process
Clear Roads Budget Overview	List of Project Subcommittee Members
TAC Contact List	Research In-Progress
Research Ranking Sheet	PDH Certificates
2019 Research Proposals/Table	

### Tuesday, April 16, 2019

#### 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 fall meeting, and a review of the objectives for day 1.

Updates to TAC membership:

#### New Representatives

- Jeremy McGuffey – Indiana DOT
- Mark Bloome – Illinois DOT
- Joe Thompson – New York State DOT
- Mark Goldstein – Massachusetts DOT (attended in Omaha)

#### Not in Attendance:

- Kevin Duby – Arizona DOT
- Kyle Lester – Colorado DOT
- Brad Burge – Nevada DOT
- Larry Gangl – North Dakota DOT
- Dan Varilek – South Dakota DOT
- Robbie Williams – Virginia DOT
- Jeff Pifer – West Virginia DOT

### Other Items of Note

- Jason McCluskey – Delaware DOT (replaces Alastair Probert, this meeting only)
- Roemer Alfelor – FHWA (replaces Gabe Guevara)
- Øystein Larsen – Norway (invited guest)
- Leslie White – Montana DOT (chemist attending spring meetings)

## **Overview of Clear Road’s Goals and Activities**

National research consortium focused on rigorous testing of winter maintenance materials, equipment and methods for use by highway maintenance crews.

Spring Meeting: Discuss new research idea proposals, score/rank/select projects to fund, and identify project subcommittee members.

Fall Meeting: Subcommittees present proposals received in response to each project RFP and the full TAC provides input for the subcommittee (MnDOT selection committee) to consider in their evaluations.

## **Discussion and Ranking of Research Proposals**

Fifteen (15) research proposals were presented and discussed by TAC members. After all the proposals were presented, each voting member of the TAC submitted rankings for each proposal, based on each project’s own merit, using a 1-5 scale (5 being the greatest need). Those votes were tallied after day 1 of the meeting and presented at the beginning of day 2.

The following projects were selected for funding for FY 2019:

1. Expanding Brine Recipes and Their Use
2. Synthesis: Retention and Recruitment of Highway Maintenance Workers
12. Comparison of Performance of Pre-wet Road Salt Distributed by Traditional Chain Conveyor Spreader Versus Auger-driven Slurry Spreader
13. Measuring the Efficiencies of Tow/Wing Plows
14. Specifications for Automated Snowplow Route Optimization

The following projects were removed from list of projects to be ranked as they are to be synthesis projects to be conducted by CTC & Associates.

6. Synthesis: Inventory and Use of Salt Spreading Systems
7. Benefits of Hiring a Meteorologist

### **1. *Expanding Brine Recipes and Their Use***

**Presented by** Jim Hughes, WI

**Estimated Cost** \$150,000

**Estimated Duration** 18 months

**Goal** To expand the current brine application rate tables to include brine blends and update or expand DLA rates to include more scenarios. The expansion needs to include application rates beyond the capability of standard or prior equipment configurations and temperature ranges. Upon completion of the expanded data tables, steps shall be taken to get these values – “AASHTO approved.”

### **2. *Synthesis: Retention and Recruitment of Highway Maintenance Workers***

**Presented by** Cliff Spoonemore

**Estimated Cost** TBD

**Estimated Duration** 12 months

**Goal** Each State has the same theme of not being able to recruit or hold on to good hands. Rather than study the issue as presented in 2018 (focus on compensation), this project will shift the focus to a synthesis to identify the key factors which explain why employees pursued positions with the state DOT and why are they staying with those agencies over time. This synthesis can be used to show leadership, and ultimately legislatures, that state employment problems can be helped if we make conditions better.

### **3. *Determining Best Practices for the Management of Fuels for Winter Maintenance Equipment***

**Presented by** Clay Adams

**Estimated Cost** TBD

**Estimated Duration** 12 months

**Goal** To determine the best methods of sampling and testing fuel for winter use. To determine how to troubleshoot fuel issues in trucks and in storage tanks. To test different methods of maintaining tanks so the fuel we put in them does not degrade.

### **4. *PSA Library***

**Presented by** David Gray

**Estimated Cost** TBD

**Estimated Duration** 12 months

**Goal** To host a library of videos created and or labeled from Clear Roads that a state can pick from to post to their social media accounts. They would be short "Winter Maintenance 101" style videos that would be posted on the Winter Preparedness website, which will be live by the summer of 2019 and is already a resource on the Clear Roads website and whose audience is the traveling public.

### **5. *Practical Use of WSI***

**Presented by** John Fleming

**Estimated Cost** \$125,000

**Estimated Duration** 18 months

**Goal** This research would develop practical guidance and understanding for executives and managers on the use of the WSI tool and how to apply the results to performance measurement, performance reporting, strategic planning, and operational decision making.

**NOTE:** Will wait for results on *CR 18-03 Evaluation of Storm Severity Indexes (SSI) and Winter Severity (WSI) Indexes and the Most Reliable Variables for Those Indexes* before further pursuing this project.

### **6. *Synthesis: Inventory and Use of Salt Spreading Systems***

**Presented by** John Fleming

**Estimated Cost** TBD

**Estimated Duration** 12 months

**Goal** Each state has various methods and types of salt delivery to the road network. This synthesis would gather information from each state to start an inventory of these different systems and to provide the rationale as to why they are used.

**Motion** (John Fleming) – Remove from list of ranked projects for consideration to be conducted by CTC & Associates. Joe Bucci seconds motion. Motion passes.

### **7. *Benefits of Hiring a Meteorologist***

**Presented by** Jeremy McGuffey

**Estimated Cost** TBD

**Estimated Duration** 12 months

**Goal** To determine if there is a benefit to hiring an on-staff or consultant meteorologist to provide forecasting more tailored to the needs of a state DOT.

**Motion** (Jeremy McGuffey) – Remove from list of ranked projects for consideration to be conducted by CTC & Associates. Doug McBroom seconds motion. Motion passes.

### **8. *Impacts of Corrosion Inhibited Magnesium Chlorides on Pavement Components such as Cement Pastes, Asphalt Binders and Aggregates***

**Presented by** Todd Miller

**Estimated Cost** \$120,000

**Estimated Duration** 18 months

**Goal** To test the corrosive or degradation impacts of corrosion inhibited Magnesium Chloride to non-corrosion inhibited Magnesium Chlorides or Sodium Chlorides.

### **9. *Synthesis: In-Cab Operations Simplification***

**Presented by** Brian Burne for Larry Gangl

**Estimated Cost** TBD

**Estimated Duration** 12 months

**Goal** Through what is learned from this project, states can make better decision regarding the way in in-cab environment is configured in order to make it more comfortable for the operator, and thus more ergonomically suited for the long hours that those operators are in the cabs.

### **10. *Environmental Prioritization of Snow Plow Beats***

**Presented by** Joe Thompson

**Estimated Cost** \$100,000

**Estimated Duration** 12-15 months

**Goal** To develop a matrix based on established criteria for risk/sensitivity, thus allowing states to make more informed decisions regarding application of chemicals and use of other snow fighting methods. The problem is that with the inability to identify environmentally sensitive corridors (beats/routes), the state is unable to assign the proper equipment and apply chemicals at the appropriate rates to avoid further environmental degradation of both surface and ground water with Chloride and Sodium. Development of a matrix to assign environmental risk/sensitivity to S&I beats and regions. This matrix will provide an ascending prioritized list of beats based on weighted environmental variables attributed to standard GIS layers.

### **11. *Synthesis: Private Well Contamination due to Winter Snow and Ice Operations***

**Presented by** John DeCastro

**Estimated Cost** \$100,000

**Estimated Duration** 12 months

**Goal** To survey the snow states and collect information regarding their policies and practices with regard to well contamination related to snow and ice activities. What are the commonalities that exist? What are the effective solutions? The expected deliverables of this project will be to compile data on well contamination as related to use of chlorides. Get information from states regarding the number of cases. What are the numbers showing? Application rates, chloride type, and well proximity to road information can be helpful in analyzing solutions.

**Motion** (John DeCastro) – Remove from list of ranked projects for consideration to be conducted by CTC & Associates. Joe Bucci seconds motion. Motion passes.

### **12. *Comparison of Performance of Pre-wet Road Salt Distributed by Traditional Chain Conveyor Spreader Versus Auger-driven Slurry Spreader***

**Presented by** Mark Goldstein

**Estimated Cost** \$125,000-\$150,000

**Estimated Duration** 18 months

**Goal** To examine the efficiency of pre-wetting in chain-conveyor versus auger-driven slurry spreaders in side-by-side trials. For an apples-to-apples approach to be used, the same theoretical melting capacity should be used by both vehicles (same ratio of salt to magnesium chloride). Different recipes could be tested (e.g. 8-10 gallons mag chloride/ton of salt), but is important that when the methodologies are assessed side-by-side, the same recipe is utilized by both material spreader types.

### **13. *Measuring the Efficiencies of Tow/Wing Plows***

**Presented by** Doug McBroom

**Estimated Cost** \$125,000

**Estimated Duration** 18 months

**Goal** To determine the differences between a standard plow, a plow with wings and a tow plow to denote what, if any, efficiency/gains departments can expect when it purchases tow plows and or trucks with wings. Additionally, return on investment calculations would help inform administrators on future purchases. Finally, a best use scenario for the equipment with the expected efficiencies gained from those instances, i.e. interstate, two-lanes, and the like, would guide agencies on where to best deploy these types of equipment.

### **14. *Specifications for Automated Snowplow Route Optimization***

**Presented by** Scott Lucas

**Estimated Cost** \$75,000 - \$125,000

**Estimated Duration** 15 – 18 months

**Goal** To provide state DOTs with an RFP template that can be used to expedite the procurement of an automated snowplow route optimization program vendor.

**15. Mechanical Snowpack / Icepack Breaking Products Comparison: SnowLion Versus Raiko Icebreaker vs. Arctic Shark vs. Belly Plow with “Snow Bits”**

**Presented by** Ryan Ferrin

**Estimated Cost** \$150,000

**Estimated Duration** 18 months

**Goal** To compare the 1) SnowLion, 2) Raiko Icebreaker, 3) Arctic Shark, and 4) Belly Plow with “ice bits” side-by-side to see the pros and cons of all 4 products and to see if money can be saved that normally would be spent on salt, but rather would be invested in one of these products. There are multiple models and configurations of each brand and this project would explore a breadth of those models. Cost savings and the reduction of the use of salt products is the overall goal of this project.

**Clear Roads Budget and Available Funds**

Greg Waidley provided an overview of the Clear Roads budget, including amounts committed and transferred by the states, as well as the expenses from research, meetings, and administration. Clear Roads has approximately \$1,050,007.58 to spend on new research projects from TPF-5(353) and \$5,494.00 available funds for new synthesis projects.

**Discussion Item:** Considering the amount of funds available for research is more than we are likely to spend, should we consider reducing the membership fee when the pooled fund renews in 2022? If not, what are some options on which to spend the funds?

Brian Burne If you reduce this budget and you end up needing it in the future, it’s hard to get back.

Tom Peters Set aside money to do an internal review.

Russell Modrell Take the extra funds to help MnDOT with travel arrangements.

Tom Peters Pooled fund expects every state to contribute. Therefore, MnDOT will continue to contribute \$25,000 per year.

Kevin Hensley Consider using some funds to determine what research has been conducted compared to Clear Roads’ needs. Fill in some of the gaps.

Greg Waidley As part of 17-S4, Phase 2, year 2018, CTC has been tasked with conducting a Gaps Analysis. This will help us to determine what additional Subject Pages are needed and to assist with guiding Clear Roads’ research agenda moving forward.

Scott Lucas Hire a person to look at other groups outside of Clear Roads.

Greg Waidley How do you get the Clear Roads research results to your districts? Kyle Lester wanted to bring in his Colorado district personnel to Clear Roads meetings to hear what is going on. He suggested conducting a research symposium to highlight Clear Roads research.

Russell Modrell Likes the idea of conducting 4 meetings, 4-5 states, 12 regional managers.

James Morin Series of regional conferences around the US. The effort would be massive. Difficult to get people to cross state boundaries.

Greg Waidley Added stress to put on MnDOT to coordinate travel and contract with meeting locations.

Craig Bargfrede It’s the responsibility of Clear Roads TAC members to take research results back to their states.

Kevin Hensley Difficult to get agency approval for travel.

James Morin We don’t do a good job of communicating our research results to APWA.

Kevin Hensley Put together a presentation for APWA this past year that highlighted current Clear Roads research. Doing his best to share the Clear Roads research with APWA and its membership.

David Gray What about webinars?

Greg Waidley With a webinar, people are less likely to attend. They are less likely to commit their time to participate in the webinar. However, we already conduct a webinar for every completed Clear Roads project.

Clay Adams Can we increase the numbers in peer exchanges?

Patti Caswell What is in our operating procedures? Is it in our operating procedures to get the research out there? In the past, we've had researchers come to a Clear Roads meeting to do a presentation. Would like to have more presentations by researchers.

Greg Waidley Scott Lucas and I lead a discussion on this in Phoenix and the plan is to create dissemination projects for all research projects. The project budget is intended for conducting research in order to produce the intended deliverables. If dissemination activities are included in the original project budget, that money will get spent regardless of the appropriateness of the dissemination activity based on the research results. However, we had decided that instead we would assign funds from the general pot of funds if the dissemination activity was deemed appropriate based on more complete information once the project is nearing its conclusion.

Scott Lucas What about utilizing a marketing firm to share our research results with the industry?

## **State Reports**

Clear Roads representatives presented initiatives/projects that have a potential impact on practice. The complete presentations are available on the Clear Roads website on the members-only page.

- Wisconsin: Jim Hughes
- Massachusetts: Mark Goldstein

## **Wednesday, April 17, 2019**

### **Selection of FY 2019 Research Projects**

Based on the rankings received, the TAC approved the following 5 research projects with total funding estimated at \$620,000. Subcommittee members were assigned. The names underlined below will serve as co-chairs for the subcommittees. A "\*" denotes that a subcommittee member is a non-voting member.

#### ***Expanding Brine Recipes and Their Use***

- Subcommittee Members: Jim Hughes, David Gray, Ty Barger, Doug McBroom, John DeCastro, James Stevenson, Scott Lucas, and Tom Peters (added Jeff Pifer after meeting)
- Duration and Funding: 18 months and \$150,000

#### ***Synthesis: Retention and Recruitment of Highway Maintenance Workers***

- Subcommittee Members: Cliff Spoonemore, Tom Renninger, Brian Burne, David Gray, Joe Bucci, Scott Lucas, Jeremy McGuffey, and Tom Peters
- Duration and Funding: 12 months and \$70,000

#### ***Comparison of Performance of Prewet Road Salt Distributed by Traditional Chain Conveyor Spreader Versus Auger-driven Slurry Spreader***

- Subcommittee Members: Mark Goldstein, Patti Caswell, James Morin, Steve Spoor, Ryan Ferrin, James Stevenson, and Tom Peters
- Duration and Funding: 18 months and \$150,000

### ***Measuring the Efficiencies of Tow / Wing Plows***

- Subcommittee Members: Doug McBroom, Steve Spoor, Cliff Spoonemore, David Gray, James Morin, John Fleming, Melissa Longworth, and Tom Peters (added Jeff Pifer after meeting)
- Duration and Funding: 18 months and \$125,000

### ***Specifications for Automated Snowplow Route Optimization***

- Subcommittee Members: Scott Lucas, Clay Adams, Brian Burne, Todd Law, Melissa Longworth, Kevin Hensley, Kevin Duby, Kyle Lester, and Tom Peters
- Duration and Funding: 18 months and \$125,000

### **Selection of Spring 2019 Synthesis Projects**

The TAC approved the following synthesis projects, by a “yes/no” vote, to be completed by CTC & Associates. The subcommittees will work with CTC to scope and complete the projects. A “\*” denotes that a subcommittee member is a non-voting member.

### ***Synthesis: Inventory and Use of Salt Spreading Systems***

Majority Voted pass to finance and move forward

- Chairman: John Fleming
- Subcommittee Members: Patti Caswell, James Morin and Tom Peters

### ***Benefits of Hiring a Meteorologist***

Majority Voted pass to finance and move forward

- Chairman: Jeremy McGuffey
- Subcommittee Members: Scott Lucas, Joe Bucci, John Fleming, and Tom Peters

### **Review Role of Project Champion and Subcommittee Members, Next Steps and Subcommittee Selection**

Per the document entitled Project Management – Roles and Responsibilities, Brian Burne emphasized the important role of a project champion and a co-champion in terms of keeping the project on track and the importance of selecting 5-7 committee members that are highly interested and fully engaged in the project. If a TAC member rotates off of Clear Roads, his or her replacement should fill the exiting member’s role on the project subcommittee. Champions and subcommittee members are also responsible to complete project closeout forms and Research Use surveys.

### **Next Steps in the Project Development Process**

Greg Waidley briefly reviewed the next steps involved in developing the RFPs, including project scoping; posting RFPs; receiving, reviewing, and voting on the proposals submitted; and awarding the projects.

Greg Waidley The CTC Synthesis projects will have a researcher/writer assigned and do a literature search. Schedule a scoping meeting for the individual project. Will happen the month of May. By the end of May or early June we will post to MnDOT to turn into RFPs. MnDOT will post on their site and Clear Roads will post to their site as well. CTC will contact their list that these syntheses are out there.

### **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 Technologies**

- **Contractor** Parson
- **Subcommittee Members** Craig Bargfrede, Scott Lucas, Melissa Longworth, Brian Burne, Kevin Duby, Kevin Hensley\*, Roemer Alfelor\*, Clark Moe\* (MnIT: Rick Meyer\*, Lynn Nemeth\*, and Larry Christianson\*)
- **End Date** Extending to August 2019

- **Status** The research team (Parsons) launched the web portal, which is hosted by Parsons on the cloud until the end of the project (August 2019). The research team and subcommittee have done their best to engage vendor participation on the pilot test of the web portal but with little success. Parsons is in the process of writing a white paper based on those results.
- **Discussion**
  - Need to continue the support of this testbed software. It makes sense to have Parsons continue with this. Maybe make a one-year contract for them to support the testbed software. I don't know how much that would cost. We don't know how successful this will really be. We think we have a good product, but not really sure because we have not had the full vendor test yet. No more than a year to continue to support. From there we can go longer. This would be CTC recommendation.
  - Send an email with proposed language to be included in your state-generated RFPs. This was included within the Task 3 (Vendor Test) white paper submitted by Parsons. Which vendors participated in the pilot test? -- Force America, Monica Power, Cypress Solutions and Bosch Rexroth.

**Motion** (Craig Bargfrede) – Investigate a maintenance agreement with Parsons for a one year contract – initially. Scott Lucas seconds motion. Motion passes.

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

- **Contractor** Washington State University
- **Subcommittee Members** Jeff Pifer, John DeCastro, James Morin, Monty Mills\*, Rick Nelson\*, Max Perchanok\*, Mark DeVries\*, Wilf Nixon\*
- **End Date** April 2019
- **Status** Obtaining approval on a minor language modification within the section on deicing. Once that it done, the project will be complete.

### 16-03 Standards and Guidance for Using Sensor Technology to Assess Winter Road Conditions

- **Contractor** SRF Consulting
- **Subcommittee Members** Kyle Lester, Cliff Spoonemore, James Morin, Dan Varilek, Jakin Koll\*
- **End Date** April 2019
- **Status** Final report has been reviewed, revised, and approved. Final webinar occurred on 4/11.
- **Discussion** What will happen with the devices purchased as part of this project?
  - MnDOT will obtain these devices. MnDOT can redistribute or store them.
  - Members (states) that would be interested one of these four units... Melissa Longworth (MI), David Gray (NH), Mark Goldstein (MA), Scott Lucas (OH), Doug McBroom (MT), and Patti Caswell (OR).

### 16-05 Weather Event Reconstruction & Analysis Tool

- **Contractor** The Narwhal Group
- **Subcommittee Members** Brian Burne, Patti Caswell, Alastair Probert, Todd Miller, Tom Renninger, Jeff Pifer, Joe Bucci
- **End Date** December 2019
- **Status** The Tool is complete and is being moved to the Clear Roads website. We have their assistance technical support until December 31, 2019. Suggest we use the Tool over the summer and decide at the fall meeting what to do regarding continued support.

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

- **Contractor** SRF Consulting
- **Subcommittee Members** Kyle Lester, Jon Fleming, Scott Simons, Todd Law, John DeCastro, Melissa Longworth, Brad Burge
- **End Date** June 2020
- **Status** The Literature Review and been completed and approved. The research team is working to put together the draft survey for subcommittee review/approval.



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

- **Contractor** SRF Consulting
- **Subcommittee Members** Cliff Spoonemore, Brian Burne, Clay Adams, Dan Varilek, Mindy Heinkel\*
- **End Date** October 2019
- **Status** The research team has completed the compilation of existing agency specifications and input from the industry collected from the Task 2 survey. The subcommittee approved this deliverable. The next task (Data Synthesis and Analysis) is to provide an analysis of what specifications have risen to the forefront and will become a recommended standard specification. Also in this next task, the research team will report input from Larry Kirchner, their metallurgist, who brings a differing perspective about carbide properties than the vendors.

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

- **Contractor** SRF Consulting
- **Subcommittee Members** Todd Miller, Russell Modrell, Dan Varilek, Alastair Probert, Craig Bargfrede, Kevin Hensley\*
- **End Date** July 2020
- **Status** Task 2 (Literature Search) has been reviewed and approved. Task 3 (Survey) has been completed and the results have been sent to the subcommittee for their review and comment by April 26. The research team and subcommittee are scheduling a progress meeting for late April to discuss the next two tasks, which include follow up interviews and vendor contacts.

### **18-01 Defensive Driving for Snowplow Operators**

- **Contractor** Virginia Tech
- **Subcommittee Members** Doug McBroom, Clay Adams, James Stevenson, Brian Burne, Robbie Williams, Steve Spoor, Kevin DUBY, Larry Gangl, Marv Hayes
- **End Date** August 2020
- **Status** Conducted kickoff meeting with the research team in late March. They are now moving forward with the literature review.

### **18-02 High Performance Blade Evaluation**

- **Contractor** University of Akron
- **Subcommittee Members** Craig Bargfrede, James Morin, Joe Bucci, Scott Lucas, Melissa Longworth, John DeCastro, Tom Renninger, David Gray, Mindy Heinkel
- **End Date** July 2020
- **Status** Contracted at beginning of this week.

### **18-03 Evaluation of SSI and WSI Variables**

- **Contractor** The Narwhal Group
- **Subcommittee Members** Todd Miller, James Morin, Jeremy McGuffey, Ryan Ferrin, James Stevenson, Todd Law, David Gray, Mark Goldstein, Russell Modrell
- **End Date** TBD
- **Status** Contract negotiations.

### **18-04 Review and Summary of Pre-Wet Methods and Procedures**

- **Contractor** Washington State University
- **Subcommittee Members** James Morin, Patti Caswell, Russell Modrell, Todd Law, Alastair Probert, Cliff Spoonemore (replace Russell Modrell with Doug McBroom and Mark Goldstein)
- **End Date** TBD
- **Status** Contract negotiations.

### **18-05 Alternative Methods for Deicing**

- **Contractor** Western Transportation Institute, Montana State University
- **Subcommittee Members** Russell Modrell, Joe Bucci, Jon Fleming, Rick Nelson, John DeCastro, Patti Caswell, Joe Thompson, Jan Niclas (replace Russell Modrell with James Morin as co-champion, and add Oystein Larsen)
- **End Date** January 2020

- **Status** Conducted kickoff meeting with the research team in early March. They are now moving forward with the literature review.

### 18-S1 Mechanic Training for Upkeep of Winter Maintenance Equipment

- **Contractor** CTC & Associates
- **Subcommittee Members** Larry Gangl, Brad Darr, Jeff Pifer, Alastair Probert, Kyle Lester, Steve Spoor, Brad Burge, Chris Volkert\* (CO), Tim Cunningham\* (KS; AASHTO's EMTSP Panel)
- **End Date** September 2019
- **Status** Finalizing the Scope of Work. Expected to begin work in early May.

### Clear Roads Qualified Products List

- **Contractor** CTC & Associates
- **Subcommittee Members** Patti Caswell, James Morin, Kyle Lester, Doug McBroom, Steve Spoor, Jasmine Donglinger, David Gray, Tom Peters, Leslie White
- **End Date** Ongoing
- **Status** An updated listing – as of March 2019 – is posted to a new QPL project page on the Clear Roads website. Continuing to work through the process of documenting how products get onto – and off of – the QPL. A draft is being prepared and will be available for review by the TAC. Adding a column to the QPL, “Expiration Date.” Each product will expire on December 31<sup>st</sup>, five years after the product’s approval date. At the fifth year, the vendor will submit a letter to Clear Roads and we will extend the expiration date for another five years. Through QA procedures, if we get back test results, we can submit that Clear Roads will remove from QPL. It will keep the list clean and making sure they are meeting expectations. First date for expiration will be December 31, 2024 for all projects.
- **Discussion**
  - Will this create a back log for the same expiration date?
    - QPL will be updated on January, adding a footnote, “removed in 2024 no vendor letter.” Have not finalized the details on this yet.
  - Subcommittee member discussion...
    - Rearrange contacts so that Leslie White is not the main contact on web site. Instead move Patti Caswell, the Chair, to the top.
    - John said he does not want to be on the subcommittee.
    - We do have a contact list that we will be writing up and sending out. We will draft up a sample email and send to the full Clear Roads group.
  - PNS site...
    - Want to make sure the QPL webpage on the Clear Roads site is live and clean up the PNS site.
    - Would like to pause on the PNS for now.
  - Announcement... need to send announcement to the vendor community and cities/counties to let them know these changes have been made.
    - PNS site needs to be up-to-date first.
  - Next meeting – end of May. Need to have a deadline for what we are changing to the PNS site.
  - The Clear Roads QPL will be standard for placeholder for all future meetings.

### Clear Roads TAC Vice Chair

Patti Caswell was solicited to determine her interest in the position. She responded with interest. Clay Adams nominated Craig Bargfrede. Craig respectfully declined the nomination.

**Motion** (James Morin) to Vote and appoint Patti Caswell as vice chairman. Tom Renninger seconds the motion. Motion passed.

### Business Roundtable

This is an open discussion period available for member states to ask questions, discuss commonly experienced challenges, and success stories.

## Salt Institute

Brian Burne Salt institute has closed its doors and Clear Roads is reaching out to them in an effort to archive much of their road salt resources.

## National Meetings

### AASHTO Maintenance Committee

- Conference location: Grand Rapids, MI.
- Dates: July 15 – 17.
- Details: TWG will meet two or three times during that period. Brad Barr will be attending. It's a joint meeting with TRB. There will be TRB presentations.

### AASHTO Research Advisory Committee

- Conference location: Santa Fe, NM.
- Dates: July 22 – 25.
- Details: Will create a poster (different required dimensions than the TRB poster) and, at a minimum, Brian Hirt of CTC & Associates, will man the poster. This conference doesn't merit sending a TAC member as the posters will only be up during one or two break sessions.

### NLTAPA/NTTD

- Conference location: Stowe, VT.
- Date: August 13<sup>th</sup> at 3:30 PM.
- Details: Conference has a session on available training materials and resources from multiple roadway-related organizations and the Clear Roads training materials would be a perfect fit for that session.
  - Tom Peters offered to attend this meeting. Waiting to be approved for out of state travel. Add Todd Law to this meeting as well.

## Indiana State Report

Presented by Jeremy McGuffey. Presented initiatives/projects that have a potential impact on practice. The complete presentation is available on the Clear Roads website on the members-only page.

## Standard Test Procedure for Ice Melting Capacity of Deicers

This is a FY 2018 project that was delayed longer than the rest of the projects due to an extended period of time to finalize the Scope of Work. The RFP response period ended on April 2, 2019 and MnDOT received four proposals in response to the RFP. Below are the institutions that submitted a proposal and the discussion surrounding those proposals.

**Presented by** Ty Barger (Dave Hanson and Chemist Jasmin Dondlinger (both Nebraska DOT) on the phone for this discussion)

Proposals submitted by:

- University of Akron
- Michigan Technological University
- Ohio University
- Washington State University

One vendor talked about testing solid products. They didn't discuss what they are going to do with these solid products. Are you asking them to test solids?

We did not ask for a specific solid test procedure. This is one of the things that makes their proposal unique. Was there discussion at any point, previously, about adding in or developing a test for solid material?

No discussions here in our DOT. Enviro Tech has played around with some solid testing. Not sure where they are with this testing.

Need six lab testing to meet the AMT. Sounds like you already did round robin testing.

Yes, already did that testing in four different labs. It was a year ago. How far back was out round robin testing?

Unsure.

Are they proposing that they are going to re-do everything that you have already done?

They are going use our data and add to it.

In the introduction, you had talked about the agriculture bi-products... the beat juice and the difficulty of knowing what you are getting. I don't see any of that included in the proposal and how they are going to analyze beat juice products for melting capacity.

One vendor did mention that and there may be some considerations there. Due to the viscosity of the product. May introduce more error. You might have more product clinging onto the ice cubes when you make the transfer. Deliverables two and three, from the original proposal, have been tabled and moved to the subcommittee for QPL.

Did not realize the measuring all of the agriculture bi-products have been moved out of this project. They mentioned that this may be an issue with the test because if it's sticky, how do you get this off your ice cubes to measure your melting?

I was impressed that they had identified this and acknowledged that it may be a source of the error as they go forward in developing the test procedure for those products. Don't believe we have conducted these tests. I read their proposal and understood that there may be a potential that they will have to resolve.

They are not responsible for resolving this.

They are developing recommendations for as they identify changes in the procedure. One error they wanted to investigate and improve the procedure. It's in the scope currently.

Testing of solids is not what we are doing here. It's in their proposal. But once we get a researcher on board, we will be redefining the scope. It's been mentioned, the sodium chloride has to be repeatable to make sure the test is valid.

One proposal may have placed too much info in their submittal. Only one discussed solids. The main purpose of this RFP is to create a national standard, but not to do solids.

We are asking them to modify the procedure, including how to make this procedure better. They were expanding to look into solids. It's something they see the potential with.

Since we have not seen the cost proposals... can we modify?

Based on what I've been hearing, what we will have to do is to make a decision that all four of these proposals are not meeting our needs. Not sure if we will post it out again. We could just stop it there. We have a pre-approved TRAP list we can use.

## **SICOP and PIARC Report**

Rick Nelson provided an update on AASHTO's SICOP activities. Presentation can also be viewed on Clear Roads website.

## **Review of Clear Roads Website**

Greg Waidley reviewed the Clear Roads website, specifically the members-only page.

## **FHWA Report**

Roemer Alfelor provided an update on the following FHWA activities. Presentation can also be viewed of Clear Roads website.

## **Future Meetings**

### Spring 2019

Review of 2019 spring meeting.

### Fall 2019

Location: Burlington, VT.

Dates: September 24 – 26, 2019. Travel on 9/23 and 9/27.

Backup: Maryland.

### Spring 2020

Location: Plan was for San Antonio but the NWMPE in fall of 2020 may be in Houston. Don't want two meetings in a row in Texas. The backup to San Antonio is Madison, WI. The TAC voted in favor of moving the location to Madison, WI. Backup to Madison is Rapid City, SD.

Dates: April 21 – 23 Travel on 4/20 and 4/24.

### Fall 2020

NWMPE/TRB Meeting will be in Atlanta or Houston (September). More details to come.

## **Thursday, April 17, 2019**

### **Norway Report**

Presented by Øystein Larsen (see presentation on members-only portion of the Clear Roads website)

### **Vermont State Report**

Presented by Todd Law. Presented initiatives/projects that have a potential impact on practice. The complete presentation is available on the Clear Roads website on the members-only page.

### **APWA Report**

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

### **Outcomes of Recently Completed Projects**

(Including a reminder of project need and goals, as well as outcomes and implementation opportunities/successes.)

#### ***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.

**ACTION ITEM** CTC will convert video animations to MP4 files and post under Research Project Documents on the members-only site.

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

Presented by Brian Burne.

## **Business Roundtable**

### **Plow Blades**

David Gray Initiated a discussion surrounding the need to conduct quality tests of random blade samples upon delivery and compare them to the contract specifications.

### **Truck Bed Scales**

Ryan Ferrin Queried the TAC to see if anyone has experience with on-board truck bed scales.

### **Brine Applications**

Jason McCluskey Asked the TAC about issues with brine refreeze due to oversaturation or using too high of a concentration.

### **Equipment Purchasing**

Joe Buccj Asked the TAC about their experience with equipment purchasing the use of NASPO.

### **Clearing Sidewalks**

Joe Bucci Asked the TAC if other states are required to clear snow from sidewalks.

### **Operator Training**

Joe Bucci Asked the TAC about other states' operator training requirements.