



**MINUTES**

**Clear Roads 2020 Technical Advisory Committee Meeting**

Pooled Fund Project TPF-(353)

**Wednesday, September 30 to Thursday, October 1 (Online Meeting)**

Kevin Duby, Arizona DOT John Oliva, Caltrans Jamie Yount, Colorado DOT John DeCastro, Connecticut DOT Aiden Neely, Connecticut DOT Alastair Probert, Delaware DOT Steve Spoor, Idaho Trans Dept Laura Shanley, Illinois DOT Craig Bargfrede, Iowa DOT Clay Adams, Kansas DOT Brian Burne, Maine DOT Mark Goldstein, Mass DOT Melissa Longworth, Michigan DOT Tom Peters, Minnesota DOT Todd Miller, Missouri DOT	Doug McBroom, Montana DOT Ty Barger, Nebraska DOT Jasmine Dondlinger, Nebraska DOT John Angel, Nevada DOT David Gray, New Hampshire DOT Ken Relation, New York State DOT Joe Thompson, New York State DOT John Izzo, New York State DOT Jon Fleming, Pennsylvania DOT Scott Lucas, Ohio DOT Patti Caswell, Oregon DOT Joe Bucci, Rhode Island DOT James Stevenson, Texas DOT Matthew Heinze, Texas DOT Rhett Arnell, Utah DOT	Todd Law, Vermont AOT James Morin, Washington State DOT Cody Churchill, Wisconsin DOT Emil Juni, Wisconsin DOT Jeff Pifer, West Virginia DOT Cliff Spoonemore, Wyoming DOT Kevin Hensley, APWA Tony Coventry, FHWA Rick Nelson, SICOP Bard Nonstad, NPRA Øystein Larson, NPRA Kirsten Seeber, CTC & Associates Andrea Thomas, CTC & Associates Greg Waidley, CTC & Associates
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**Materials Distributed**

- Agenda
- Clear Roads Budget Overview
- Research In-Progress

**September 30, 2020**

**Introductions and Meeting Objectives**

Chairperson James Morin 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 this meeting. The primary focus of this meeting was to review project proposals, get partner updates, and updates on projects in progress.

New representatives

- Laura Shanley, Illinois DOT
- Emil Juni, Wisconsin DOT

Not in attendance

- Pat Carroll, Alaska DOT and Public Facilities
- Larry Gangl, North Dakota DOT
- Jeremy McGuffey, Indiana DOT
- Scott Simons, Maryland DOT

- Dan Varilek, South Dakota DOT
- Anne Margaret White, Virginia DOT

#### Other items of note

- John DeCastro, CT will be replaced by Aiden Neely after April 2021. John retiring from DOT.

#### **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.

#### **Norway Public Roads Administration Report**

*Øystein Larsen and Bård Nonstad (See presentation on CR website – members only)*

- Questions/Comments
  - Cliff Spoonmore – Why are there not one meter shoulders on the mountain pass?
    - ~ Bård Nonstad/ Øystein Larsen – There is not much shoulder in many places in Norway because they don't have the space. They agree it would be much safer with shoulders.
  - Cliff Spoonmore – Is there a minimum limit on the friction value that is provided?
    - ~ Bård Nonstad – Yes, there are friction requirements for all roads. During a winter event, they don't have the friction standards. When road conditions change, they need time to get the friction up again.
  - Patti Caswell – Is NPRA is correlating certain weather conditions and associated speed reductions to predict that when those conditions occur in the future, the speed will be reduced accordingly?
    - ~ Bård Nonstad – When the speed decreases by 20%, they see that they need to close the mountain pass or initiate convoy driving. They put in data from previous years to predict closures.
  - James Morin – Is NPRA currently using AI to help with variable speed limits or to close mountain passes?
    - ~ Bård Nonstad – They don't have variable speed limits in the mountains. They are planning to use the data to help the contractor decide when to close the mountain pass. This also assists new contractors who don't have experience. Øystein Larsen – It also helps to provide information to the road users so they know if/when they can use the road.
  - Scott Lucas – Do they recover the screwed in snow poles after winter?
    - ~ Øystein Larsen – They take the snow poles down after winter. Seventy percent of the plastic poles and thirty percent of the bamboo poles can be used again. Some big poles are up all year.
  - Brian Burne – To help NPRA express the 99% national roads open during the year, deduct the lane kms that are closed during certain times.

## TAC Discussion of FY2020 Proposals

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

### RFPs not on this agenda

- 20-01 Entry-Level Commercial Driver's Training
  - ~ This project is on a fast track to stay ahead of the federal rule due in February of 2022. The proposal has been sent to the TAC for review and comment.
- 20-03 Indoor Automated Stockpile Measurement
  - ~ RFP was delayed in order to obtain feedback from vendors. Proposal has been posted and proposals are due 10/28/20.

### 20-02 Understanding the NaCl Phase Diagram

*Project Co-Champions: Brian Burne/Doug McBroom*

- This project is aimed at getting a clearer understanding of salt solutions at different levels and how they behave. Salt solutions will be lab tested at different concentrations. This project will produce a video demonstrating how the solutions behaved in the labs and one-page fact sheets, with graphics. Much of the project is focused on training.
- One proposal received from WTI.
  - ~ When one proposal is received, the subcommittee members do not have complete the scoring sheet and have a scoring meeting with MnDOT. Only an agreement by the TAC is needed to move forward with the researcher.
  - ~ The proposal can be modified prior to it becoming part of the contract. The subcommittee needs to let Greg Waidley know about any modifications before he informs MnDOT to move forward to contracting.
- This project is for NaCl only. Additional blends were discussed but the subcommittee chose to focus on NaCl to get it right and then revisit other chemicals later.
- The report will use the Fahrenheit temperature scale.
- WTI has a cold room in their lab, so they will be able to measure friction at the different concentrations to see how the salt works on pavement.
- Concrete will be included in the testing. Washington State has a vested interest in this.

### 20-04 Expanded Use of AVL/GPS Technology

*Project Co-Champions: David Gray/Steve Spoor*

- The purpose of this project is to find expanded uses of AVL/GPS technology for summer maintenance activities. Is the technology worth having if can't be used year-round? The researcher will send a survey to agriculture users and non-winter states to determine their non-winter uses (sweepers, pesticides, etc.) of the AVL/GPS.
- Four proposals submitted:
  - ~ AECOM
  - ~ WTI
  - ~ SRF
  - ~ Stantec
- FHWA Road Weather Virtual Team Meetings on AVL are held monthly. Various states make presentations on what they are doing with AVL. The team is also posting RFP information on bulletin boards so others can see it.

- Some states have experienced difficulty in converting the technology from use on snow plows to its use on other vehicles. Rhode Island made a deal with their cellular provider to get charged less during the non-winter months. New Hampshire leaves the wiring in the vehicles and moves the actual units only. The project's survey questions will ask about the difficulty of transferring units from one vehicle to another.

### **20-05 Using GIS to Highlight Highway Segments Sensitive to Deicing Materials** (discussed 10/1)

*Project Co-Champions: Joe Thompson/Mark Goldstein*

- The goal of this project is to improve operational planning by developing an easy-to-use GIS tool to help agencies identify the roadway segments where it would be most advantageous to implement changes to deicing activities in order to better protect vulnerable environmental resources.
- 10 proposals were received for this RFP.
  - ~ AECOM
  - ~ AppGeo
  - ~ GeoDecisions
  - ~ Graef
  - ~ MSA
  - ~ NDSU
  - ~ SRF
  - ~ Stantec
  - ~ Wilf Nixon
  - ~ WSB
- Mark Goldstein – Massachusetts uses a salt sensitivity tool, which helps them determine levels of salt sensitivity on their plow routes. MA spends 30% of their winter operations budget on salt and 1-2% on their salt remediation program. It's important for them to know where salt sensitives are on the roadways so they can adjust their salt usage. The researcher for this project will improve on the salt sensitivity tool so everyone can use it to plan their salt usage in sensitive road segments.

### **20-06 Salt Shed Design Template**

*Project Co-Champions: James Morin/ Cliff Spoonemore*

- This project will learn about, and from, other shed designs and put together salt shed designs that will be scalable. The end product will be a guide, including templates, to get an agency started on designing salt sheds.
- One proposal was received from Wilf Nixon, in combination with an engineering firm that has a structural engineer on board.
- The project will produce scalable designs, compliant with national building codes, which can be scalable to any state's building codes at the size needed. Users won't have to start from scratch or need to come up with a design.
- The project will consider different salt loading needs (conveyor or loader).

### **Discussion of the Web Portal for project, Developing Test Bed Software to Qualify Plug and Play Technology (CR 13-05)**

*Project Co-Champions: Craig Bargfrede/Scott Lucas*

- The premise of this project is to make testbed software so an AVL or hydraulic company could go into it, test their equipment, and certify themselves to be a CR-certified hydraulics system. The companies didn't want to certify without a specification and DOTs didn't want to write a

specification if companies couldn't confirm it. Where does this effort go next? Should CR pull the plug on the testbed software?

- It's difficult to get the spreader controller companies to change their protocols the way CR had hoped. AVL companies are more open to doing backwards compatibility checks.
- If there are posted agency RFPs that include using the testbed software, then CR should not shut down the portal yet.
  - Oregon has included the testbed software into an RFP. Their project is about how AVL will interact with the spreader controller. The folks who are successful with working with the spreader controller will get the bid. The bidders will have to show they can work with all of the types of spreader controllers OR has.
  - Michigan posted an AVL RFP, which had a requirement that vendors install their systems in the dump trucks to show it works with MI's spreaders. At least one vendor failed.
- Spreader controller companies only sell spreader controllers. The AVL/GPS companies can put their technology on many types of equipment, which makes them more flexible.
- The project contract with Parson's ended on 9/30/20 but MnDOT extended it to 9/30/21.
- **ACTION ITEM:** The subcommittee will reconvene, come up with a recommendation about the testbed software, and come back to TAC at the spring meeting. The committee will also discuss if there should be a QPL for spreader controllers and AVL vendors.
- Parsons can be involved in the subcommittee's discussion about the potential future of this project, but this could eliminate them as a proposer on a potential future RFP. The subcommittee may want to get technical expertise from a vendor that will not be bidding on a future RFP.

## Business Roundtable

- 17-02 Standard Specifications for Plow Blades with Carbide Inserts  
*Project Co-Champions: Brian Burne and Cliff Spoonemore*
  - The goal of the project was to have a standard CR specification that the industry could use.
  - This project is complete but a blade manufacturer has raised concerns related to the specifications in the final report.
    - ~ The blade manufacturer claims that CR put together differs from what the industry had been using and the CR specification would interfere. The subcommittee and SRF (researcher) are in the process of obtaining more information from other blade companies to verify this information.
  - Wyoming will go ahead with the current CR specification (C04) and see if they get any bidders. They will see what feedback they get and then reevaluate. Cliff Spoonemore will keep the TAC informed of what happens.
  - **ACTION ITEM:** The subcommittee will meet and come up with a recommendation to bring to the TAC at the spring meeting.
- COVID-19
  - Agency responses
    - ~ James Morin – Washington State is starting to allow two staffers in a vehicle if it's less than an hour and they wear cloth masks. If more than one hour, then the staff must wear fit tested N95 masks. Beards fail the fit test and that's an issue. They are hiring temps for winter who they have to train on how to use a plow. If they are not allowed to have two staff in a snowplow, this will be an issue.
    - ~ Brian Burne – Maine started out with one person per vehicle. Then they went to two people in a vehicle if it had a double row cab and plastic between the rows. Some staff got car sick in the backseat or weren't getting the air conditioning, so they made modifications. They allow driver-trainers to work with trainees in the vehicle with masks and with a time limit.

- This is the only exception. Currently they can have two staff, wearing masks, in a vehicle with no plastic between the rows.
- ~ Doug McBroom – Montana has switched to their winter shifts to limit contact between people. They had an instance where someone infected half of a section with COVID-19. If this occurs in winter, it will have a big impact on operations. His Plan B is to move folks around and pay for hotel rooms.
  - ~ Jon Fleming – Pennsylvania’s Office of Administration has a COVID-19 policy that follows the CDC guidelines. Currently that is a limit of 15 minutes if less than 6 feet apart, masked or unmasked. PA is quarantining folks if they are exposed to COVID-19. PA is a highly unionized workforce and if their governor declares a state of emergency because the DOT can’t plow the roads, they can put National Guard members in the plows. They can also move staff around the state to plow. Jon has gone out to the contractor associations to encourage them to sign up on PA’s qualified list so they can be rented as plow drivers, if needed. PA is working on a construction contract where they can obtain operators from a company that has CDL operators and use them. They would turn them into temporary agencies for a period of time. Lastly, they are looking at exempting medical certificates and drug testing.
  - ~ Joe Bucci – Rhode Island is on split shifts right now. RI is also heavily unionized so they are not able to use anyone with a CDL. RI is trying to figure out overtime issues with split shifts and how to give crews rest when everyone goes into the same break room.
  - ~ Scott Lucas – If a garage goes down in Ohio, they will shift staff to fill in. OH is having issues filling positions due to restrictions from leadership. They are down drivers, managers and mechanics. They have temperature check stations for staff coming into a garage. They are also sanitizing trucks between drivers.
  - ~ Craig Bargfrede – Iowa is looking at adjustment of shifts, lengthening out snow runs and moving staff from one place to another if folks need to isolate.
  - ~ Joe Thompson – New York State put together a checklist for COVID-19, which Joe sent to Greg Waidley for posting on the CR website, members only section. NYSDOT is going thru the same exercise as PA. They are also asking for statements from salt and fuel vendors if they have disruptions.
  - ~ Todd Law – Virginia is implanting a screening protocol for all employees prior to coming into work. They are not doing this with contractors. They are also hiring lots of temps this year.
  - Prepping DOT and state leadership for a possible reduction in level of service.
    - ~ James Morin – They spoke with legislators who assumed the DOT will be providing the same Snow and Ice program, even though they are down 300 permanent staff.
    - ~ Todd Miller – Missouri reached out to the legislature to let them know that they have a substantial amount of vacancies that could compromise winter maintenance. The legislators encouraged the DOT to let the public know and encourage residents to telework.
    - ~ James Stevenson – Texas has dealt with this issue as COVID-19 affected their hurricane response. Let your agency know so they can put out the message to the public to set expectations. No staff COVID-19 infections resulted from any of the three tropical systems/hurricanes responses. Plan shift work well. Shift transitions need to happen in an open environment. Bubble folks as much as possible so they don’t contaminate crews. Have back up crews so that if one goes down, another is ready to come in and take over.
    - ~ Jon Fleming – Pennsylvania’s DOT Secretary is going to adjust expectations on October 5th when she does a winter briefing to the public. Her main point is that DOT staff are just as susceptible to COVID-19 as everyone else and they could be impacted, this may force them to plow primary arteries and hospitals first.

- Modifications to in-person training.
  - ~ James Morin – Washington State held a virtual snow academy, using videos to do the interactive pieces. They are doing hands-on training on a small scale with fewer than 10 people at a time. Hands-on training takes place outside with social distancing and masks.
  - ~ Craig Bargfrede – Iowa’s training at the garages consists of videos and splitting up the crews so the entire garage isn’t in the classroom at one time. Hands-on training consists of small groups. New employees ride along with two in a vehicle, wear masks and follow a cleaning procedure when done. Classroom training/driving simulator has two students at time with one instructor. The training time has gone from six to twelve weeks to get everyone through.
  - ~ Scott Lucas – Ohio is using Teams Meetings for training. They are training in garages and everyone is spread out. They also train outside for now.
- Hiring freezes
  - ~ Jon Fleming – All Pennsylvania state agencies, except the DOT, have a hiring freeze.
  - ~ Todd Law - Vermont has a hiring freeze that has led to significant vacancies. They made a special request to the Secretary of Administration through the Secretary of Transportation to allow hiring of maintenance workers and a few other critical employees. They began recruiting in the last week.
  - ~ Rhett Arnell – Utah is in a hiring cooler, meaning they can hire essential workers and luckily plow drivers/maintenance folks are essential.
  - ~ Clay Adams – Kansas has a hiring freeze but they have been able to get permission to fill positions that are for COVID-19 response, or to keep the highway construction projects going in support of economic recovery.
  - ~ Joe Bucci – Rhode Island has a hiring freeze and they are just now hiring drivers, which could be a case of too little too late. They also anticipate a reduction of winter contractors signing on, which will also have a major impact. For the first time that Joe knows of, RI has more trucks than drivers.
  - ~ John Angel – Nevada does have a hiring freeze and their permanent positions are down 35%. They received approval to hire winter help but they have been less and less successful filling those positions due to pay scale.
  - ~ Jeff Pifer – No hiring freeze in West Virginia.
  - ~ Kevin Duby – No hiring freeze in Arizona.
  - ~ Alastair Probert – No hiring freeze in Delaware.

### **Clear Roads Budget – Greg**

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.

- Income: \$3,634,914
- Expenses = \$3,424,494
- Available Funds = \$210,420
- Most states have transferred their funds for FFY20 and the rest are working on their transfers.

### **Clear Roads Qualified Products List – Patti Caswell**

Review of the Chemical Specifications and Testing Protocol document, the online vendor product submission form, and backend management.

- The Chemical Specifications and Testing Protocol guidance document is getting close to being published. Greg Waidley sent it to the TAC for review.

- The document includes a flow chart.
- Timelines were not published but the subcommittee is responding to folks in a timely manner.
- Vendors must submit a complete package before CR will accept it. Incomplete applications are returned.
- Field verification won't be required, for the most part.
- The products have an expiration date, which is the end of the calendar year five years from the year it was submitted.
- Removing products from the QPL – If there are concerns about a product on the QPL (from the states own testing), they subcommittee will ask the vendor for samples to verify or they will remove the product based on the states' test results. The issues is that CR doesn't have certified labs for the products.
  - Patti Caswell received complaints that the corrosion testing is not consistent. Jasmine is working on this via a separate research project. There are no products in this situation right now.
- Producer changes – If a different producer is making a qualified product, then new producer has to reapply to be on the QPL. If a product is modified, it also needs to be resubmitted.
- For new categories, the subcommittee will rely on feedback from vendors about the specifications. If vendors indicate that the specifications are not good, the subcommittee will reconsider them.
- There continues to be an experimental category for liquid products and a new category for solid products.
- All of the requirements are now in tables.
- Purchasing section – Guidance to states on how to bid products.
- The document is easier to read so it is easier for vendors to apply to the QPL.
- Associated project - CTC is helping with a backend form that will auto-populate a database. The plan is when a vendor submits and chooses a product category, the requirements on the form will change to fit the category.
- Questions/Comments
  - Expiration dates – If a product hasn't changed, the vendor only has to provide CR with a letter stating that fact, rather than going through the submission process. This is a way to keep the QPL clean.
    - ~ CR will accept a vendor's word that their product hasn't changed. States will also be doing their own testing and it will be obvious if something changes. For example, there was a QPL-listed brine corrosion additive where the formulation changed – MT found it – the vendor failed the QPL specifications and the product was removed.

## **Thursday, October 1, 2020**

### **APWA Report**

Kevin Hensley (See presentation on CR website – members only)

### **SICOP and FHWA Reports**

Rick Nelson and Tony Coventry (See presentation on CR website – members only)

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

For each active project, the TAC reviewed subcommittee members and assigned new members, if needed. Non-TAC members will be kept on the list and identified by an asterisk. They will receive project communications at their DOT emails, as appropriate. A "\*" denotes that a subcommittee member is a non-voting member. A name that is underlined denotes a project champion.



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

- **Contractor:** SRF Consulting Group
- **Subcommittee Members:** Jon Fleming, Scott Simons, Todd Law, John DeCastro, Melissa Longworth, Tom Peters
- **End Date:** December 2020
- **Status:** This project received a six-month extension due to COVID-19. An extra task (Task 8) was added to compare available large data systems, as new winter operations technologies have debuted since 2017.

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

- **Contractor:** SRF Consulting Group
- **Subcommittee Members:** Todd Miller, Dan Varilek, Alastair Probert, Craig Bargfrede, Tom Peters, Kevin Hensley\*
- **End Date:** June 2021
- **Status:** The remainder of this project is the pilot project. SRF is partnering with MN District Four this winter for the pilot project. Four thousand dollars was added to this project to purchase the cameras for the pilot project.

### 18-02 High Performance Blade Evaluation

- **Contractor:** University of Akron
- **Subcommittee Members:** Craig Bargfrede, James Morin, Joe Bucci, Scott Lucas, Melissa Longworth, John DeCastro, David Gray, Tom Peters. Aiden Neely will be added to take John DeCastro's place after he leaves CR.
- **End Date:** January 2021 (extending to summer 2021)
- **Status:** Due to difficulties with the intended field testing during the 2019-2020 winter, the project subcommittee is currently working with the research team to amend the contract until at least the summer of 2021. The project will include a refined set of study blades and recommended standard test protocol for evaluating blades.
- Discussion:
  - Greg Waidley – There will be two amendments to this project. The first amendment will be a NCTE to extend the project to the end of 2020. This will provide the PI time to put together a second amendment, which will be an additional cost proposal. Greg will send the TAC the list of blades to be tested and the testing plan. The final list and plan will determine the cost of the amendment, which will be \$75,000-\$80,000. The TAC will need to approve the cost proposal.
    - ~ If TAC members use any of the blades on the list, keep them so they can be tested to determine how they wear.
  - There is a concern that this project is moving in a different direction from the original scope. How will testing blades in a lab be equivalent to field testing? Will the TAC get something that is usable from this project? The subcommittee changed the direction of the project because of the issues with field testing and the inability to provide useful data to the TAC. Lab testing will provide a standard and a repeatable testing protocol.

- The TAC will have an opportunity to vote on the cost proposal.

#### 18-03 Evaluation of SSI/WSI Variables

- **Contractor:** The Narwhal Group
- **Subcommittee Members:** Todd Miller, James Morin, Jeremy McGuffey, James Stevenson, Todd Law, David Gray, Mark Goldstein, Tom Peters
- **End Date:** December 2020
- **Status:** The research team recently completed the spreadsheet tool and accompanying report (Task 7) that allows an agency to assess what might be required within each agency to perform an SSI/WSI that stands on its own. The Final Report and Webinar (Task 8) will be completed later this fall.

#### 18-04 Review/Summary of Pre-wet Methods

- **Contractor:** Washington State University
- **Subcommittee Members:** James Morin, Patti Caswell, Todd Law, Alastair Probert, Cliff Spoonemore, Doug McBroom, Mark Goldstein, Tom Peters
- **End Date:** December 2020 (extending to summer 2021)
- **Status:** The Literature Review (Task 1) has been submitted and approved. The research team has submitted the Survey results (Task 2). The survey questions for the Interviews and Case Studies (Task 3) and Outreach to Manufacturers (Task 4) will be sent to the subcommittee this week. This project will need a NCTE.

#### 18-06 Standard Test Procedures for Ice Melting Capacity of Deicers

- **Contractor:** Washington State University
- **Subcommittee Members:** Ty Barger, Jeff Pifer, Doug McBroom, Patti Caswell, James Morin, Scott Lucas, Jeremy McGuffey, Tom Peters, Rick Nelson\*
- **End Date:** July 2021 (extending to fall 2021)
- **Status:** The subcommittee has been working to provide the PI the original data from the mechanical rocker testing, labs that may be interested in round robin testing, and a list of deicers, including samples, they would like to see tested as part of this project. The PI is only half-way through the Procedure Evaluation (Task 1). COVID-19 has delayed this project due to the inability to access the WSU lab over the last six months. A NCTE is underway through September 2021.
- **Discussion:**
  - For Task 1, the PI will run the procedure as written and identify any modifications to the procedure.
  - The research team has looked at a handful of products, experimented with a few mechanical rocker types, as well as a few different speeds. They didn't consult with the subcommittee on these modifications, which is an issue. The research team has had the project for nine months and the subcommittee is disappointed that they are not farther along with the lab testing. The research needs a minimum of six labs to participate in this project, and so far, they have only recruited three labs.
    - ~ Ty Barger still has confidence in the research team and feels if they get an NCTE of six months, they should be able to meet the project milestones.

### **Product Proficiency Program – Jasmine Dondlinger**

- **Subcommittee Members:** : Jasmine Dondlinger\*, Doug McBroom, Dan Varilek, Patti Caswell, Scott Lucas, Jamie Yount, Tom Peters
- **Duration and Funding:** 12 months and \$25,000
- **Status:** CR will be working with AASHTO who is already testing materials. The cost is \$300/year for DOTs that are not already a member. Seventeen labs need to participate to make the program robust. Jasmine sent an email to the TAC in July to get lab suggestions. She hasn't reached out to any QPL vendors. Based on the list of labs and DOTs that are interested, they should have no problem getting to the 17 lab minimum. AASHTO needs to know which tests CR wants the labs to perform (Ph, Corrosion, weight/gallon, IMC test). Labs do not have to do all of the testing and can leave blank the tests they aren't equipped to do. CR needs to recommend how much of each material they need AASHTO to acquire because AASHTO will send materials to the participating labs. The labs will two test liquids and two solids each year.

### **19-01 Expanding Brine Recipes and their Use**

- **Contractor:** University of Wisconsin-Madison
- **Subcommittee Members:** Emil Juni, David Gray, Ty Barger, Doug McBroom, John DeCastro, James Stevenson, Scott Lucas, Jeff Pifer, Rick Nelson, Tom Peters, Kathleen Schaefer. Aiden Neely will be added to take John DeCastro's place after he leaves CR.
- **End Date:** December 2021
- **Status:** The contract for this project was initially delayed and executed on 6/19/20. The kickoff meeting was held on 7/10/20. UW TOPS lab has a good plan. The lab is working on a parallel project with WI counties so they have partners there. Task 1 (Literature Review) is complete and being revised. Task 2 (Survey of Practice) will go out to the TAC this week and will be due 9/28/20.
- **Discussion:**
  - Emil is concerned about the timeline because collection has to happen this winter season and the project started late.

### **19-02 Recruitment/Retention of Hwy Maintenance Workers**

- **Contractor:** Western Transportation Institute, Montana State University
- **Subcommittee Members:** Cliff Spoonemore, Brian Burne, David Gray, Joe Bucci, Scott Lucas, Jeremy McGuffey, Tom Peters, Rick Shomion\*
- **End Date:** July 2021
- **Status:** The Literature Review (Task 1) was completed in June and the Survey (Task 2) was sent out for response in July. Over 300 responses received. Follow up Interviews (Task 3) will occur this fall.

### **19-03 Measuring the Efficiencies of Tow/Wing Plows**

- **Contractor:** University of California-Davis
- **Subcommittee Members:** Doug McBroom, Steve Spoor, Cliff Spoonemore, David Gray, James Morin, Jon Fleming, Melissa Longworth, Jeff Pifer, Tom Peters, Kohl Skalin\*
- **End Date:** July 2021

- **Status:** Task 1 (Literature/Produce Review) is complete. Although the subcommittee worked with the PI on Task 2 (Survey), they are not sure they got the survey into the format they wanted. The survey was sent out this summer and 15 responses were received, which was disappointing. The PI is getting ready to develop Task 3.

#### 19-04 Specifications for Automated Snowplow Route Optimization

- **Contractor:** University of Vermont
- **Subcommittee Members:** Scott Lucas, Clay Adams, Brian Burne, Todd Law, Melissa Longworth, Kevin Hensley, Jamie Yount, Tom Peters, Jakin Koll\* Added Emil Juni.
- **End Date:** April 2021 (October 2021)
- **Status:** Due to staff availability changes related to COVID-19, the PI has requested an NCTE of six months. The Literature Review (Task 1) is complete. The Survey of Practice (Task 2) was sent out for response in mid-September. This is a research synthesis project.

#### **Clear Roads Equipment Online Database – Greg Waidley**

- **Subcommittee Members:** : Jeff Pifer, Brian Burne, Clay Adams, Steve Spoor, Rhett Arnell, Melissa Longworth, Tom Peters
- **Duration and Funding:** 12 months and \$75,000
- **Status:** The subcommittee met in August 2020. CTC is building the database. They are starting the project smaller and focusing on plow trucks, loaders and potentially the plow, separately. The TAC will decide where this will reside on the CR website. Eventually more categories will be added when we see how the database works initially. The web designer has created some slick tools. The tool will be filterable and searchable so it can be refined down to a granular level.
- **Discussion:**
  - Steve Spoor is involved with the AASHTO Equipment Management Technical Services Program and he will keep them informed about the progress of the database.

Confirming subcommittee members on FY20 projects. Anyone want to join?

- 20-01 – No changes.
- 20-02 – Aiden Neely will join because John DeCastro is leaving CR.
- 20-03 – Melissa Longworth is leaving CR. No replacement yet.
- 20-04 – Laura Shanley will join.
- 20-05 – Laura Shanley will join.
- 20-06 – No changes.
- 20-07 – Melissa Longworth is leaving CR. Kevin Duby will replace Mark Trennepohl.

#### **Clear Roads Website – Greg Waidley**

- Working on subject-based pages on the CR website. CR has a lot of completed projects on the website and the completed research page was cluttered. The new organization includes six topic areas with subject pages under each topic area. Every project (about to start, active or completed) is on a subject page. The new organization also allow the TAC to see what subjects are covered and help guide the research agenda moving forward.

- The four most recent subject pages are performance metrics, resource management, weather, and plow trucks.
- Each project page has an introductory paragraph, related research topics, in-progress and completed CR projects, specifications and guidelines, product experience, videos, and other research and resources.
  - The idea is to focus on CR research products. If a project has something that came out of it, they are front and center on the subject page. Non-CR, but related specifications/guidance, etc. are listed further below.
  - There is an enhanced Google search box on the Research by Topic [page](#).
- CTC has created a sortable list of in-progress research, completed research and synthesis projects on the All Research and Synthesis Projects [page](#). The page defaults to most recent projects/syntheses at the top but users can change the filters to sort by project number, title, completion date, and project status. There is also a search box on the page.
  - As new research projects come online, CTC will put them in the appropriate category and subject page.
  - The search box on the All Research and Synthesis Projects [page](#) searches on titles only. On the Research by Topic [page](#), the Google search box will find key words from the project scopes.

### **Future Meetings – Greg Waidley/James Morin**

#### Spring 2021 Meeting

This meeting is still scheduled for Madison, WI in April 2021.

- If folks are allowed to travel, and if they can find budget, would they want to travel to Madison?
  - James – Yes.
  - Brian – Willing but may be restricted. Budget may be an issue.
  - Scott – Willing to travel but DOT might not permit it. Hybrid conference for in-person and virtual. Need decent equipment for this – cameras, mics. Need to look into this.
  - Ty – Willing but may be restricted.
  - Rhett – Willing but may be restricted. Staff are advised to not travel if not necessary.
  - Patti – Willing to travel and will likely be able to. More about budget than travel restrictions. She thinks she could make a case to attend.
  - Clay – Not sure KDOT will allow travel in the spring. May not be able to travel until there is a viable vaccine.
  - Tom – Would drive to Madison.
  - James – Travel may be restricted.
  - Dave – May have to travel on his own time if the state is under travel restrictions.
  - Cliff – Our travel will need to be mission critical.
  - Todd – Currently under travel restrictions, so he will see what the future brings.
  - John – NV will have to attend virtually.
  - Dan – Travel restricted due to budget.
  - Joe – Review process that was tough before and will probably be tougher.
  - Scott – Willing to drive but would still be restricted.

- Cliff – If airlines are cutting flights, he doesn't want to have a three-stop flight to Madison. Maybe move meeting to a hub?
- James – Sounds like it will be too soon to travel in spring 2021. Tentatively plan on an in-person spring meeting but see where everyone is at around the beginning of the year.
- Greg will check with MnDOT on what happens with the hotel contract and funds. Greg will also find out the final date for making the decision on an in-person meeting and the minimum number of TAC members who would need to attend in-person.

#### Fall 2021 Meeting

The TAC is still considering Salt Lake City or Park City, UT with Boise, ID as a backup location. This may be more realistic as the next in-person meeting.

#### National Winter Maintenance Peer Exchange (Fall 2021)

- It is currently undecided if, and how (in-person or virtual), this will happen.
- Greg, Rick and Neil need to have a conversation to figure out the ground rules and get a planning committee together. Clarity is needed in about six months so attendees can be invited, vendors secured and a venue lined up. This should be on the calendar in early 2021 to start figuring it out.
- The peer exchange will tie into the CR fall meeting. We will see how the January 2021 TRB Annual meeting works with large number of virtual attendees. That meeting will have an online format with chat rooms, vendor booths, etc. Even in the fall, some will not be able to travel so CR should be looking at new virtual opportunities for a CR meeting.