



Meeting Minutes: NRRRA Intelligent Construction Technologies (ICT) Team (Meeting No. 6)

(Agency & Associate Member Meeting)

Date: February 7, 2019
 Minutes prepared by: Rebecca Embacher
 Location: Skype

Attendance

Agency Members

Participated	Affiliation	State Contact	e-mail
<input type="checkbox"/>	California	Deepak Maskey	deepak.maskey@dot.ca.gov
<input checked="" type="checkbox"/>	California	Ragu Thangavelautham	raguparan.thangavelautham@dot.ca.gov
<input type="checkbox"/>	Illinois	Brian Hill	Brian.Hill@illinois.gov
<input checked="" type="checkbox"/>	Minnesota	Rebecca Embacher	rebecca.embacher@state.mn.us
<input checked="" type="checkbox"/>	Minnesota	Kyle Hoegh	kyle.hoegh@state.mn.us
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<input type="checkbox"/>	Missouri	Dan Oesch	Daniel.Oesch@modot.mo.gov
<input type="checkbox"/>	North Dakota	Curt Dunn	cdunn@nd.gov
<input checked="" type="checkbox"/>	North Dakota	Amy Beise	abeise@nd.gov

Associate Members

Participated	Affiliation	Contact	e-mail
<input checked="" type="checkbox"/>	American Engineering and Testing, Inc.	Derek Tompkins	dtompkins@amengtest.com
<input checked="" type="checkbox"/>	Braun Intertec	Matt Oman	MOman@braunintertec.com
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<input type="checkbox"/>	Caterpillar Global Paving	Todd Mansell	mansell_todd_w@cat.com
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<input type="checkbox"/>	The University of Texas at El Paso	Nazarian Soheil	nazarian@utep.edu
<input type="checkbox"/>	GSSI	Roger Roberts	roger@geophysical.com
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<input checked="" type="checkbox"/>	Infrasense	Ken Maser	kmaser@infrasense.com



<input checked="" type="checkbox"/>	Leica Geosystems	Brad Adams	brad.adams@leicaus.com
<input type="checkbox"/>	Mathy Construction	Erv Dukatz	ervin.dukatz@mathy.com
<input type="checkbox"/>	Midstate Reclamation & Trucking, Inc.	Dan Schellhammer	dans@midstatecompanies.com
<input checked="" type="checkbox"/>	Midstate Reclamation & Trucking, Inc.	John Peterson	johnp@midstatecompanies.com
<input checked="" type="checkbox"/>	Minnesota Asphalt Paving Association	Brandon Brever	bbrever@mnapa.org
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<input checked="" type="checkbox"/>	The Transtec Group, Inc.	George Change	GKChang@TheTranstecGroup.com
<input type="checkbox"/>	Topcon Positioning Systems, Inc.	Evan Monroe	emonroe@topcon.com
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<input type="checkbox"/>	Trimble	Devin Laubhan	devin_laubhan@trimble.com
<input type="checkbox"/>	WSB & Associates, Inc.	Mike Rief	mrief@wsbeng.com

Friends

Participated	Affiliation	State Contact	e-mail
<input checked="" type="checkbox"/>	FHWA – MN	Kevin Kliethermes	Kevin.Kliethermes@dot.gov
<input type="checkbox"/>	Minnesota	Curt Turgeon	curt.turgeon@state.mn.us
<input checked="" type="checkbox"/>	Minnesota	Ben Worel	ben.worel@state.mn.us
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<input checked="" type="checkbox"/>	Minnesota	Shongtao Dai	shongtao.dai@state.mn.us
<input checked="" type="checkbox"/>	North Dakota	Jordan Nehls	
<input checked="" type="checkbox"/>	North Dakota	Darin Lindblom	
<input checked="" type="checkbox"/>	North Dakota	Carey Schreiner	

Other Attendees:

Decisions Made

- None at this time.



Action items

- NRRRA-ICT Team | Let Embacher know if interested in participating as a TAP member on any of the projects moving forward.
- Embacher | BIM for Pavements Workshop – Put together a planning committee and start planning the event as soon as possible and get draft agenda on-line for registration. Advertise for booth space.
- NRRRA-ICT Team | Determine breakout topics for May 22 and May 23 NRRRA Pavement Workshop. One-hour presentation is needed by this team on both dates.

Agenda

- NRRRA General Update
- NRRRA Workshop in MN
- Short-Term Research
- Long-Term Research
- BIM for Pavements ... Asset Management, Planning, Design and Construction Workshop

Next Meeting

Date: March 7, 2018

Time: 10:30-11:30AM Central Time

Location: Skype

(no conference call will be used; skype audio is also available via smart phone application if needed)

Agenda items: TBD

Meeting Notes

NRRRA General

(Worel)

Iowa is joining NRRRA!

2019 TRB complete (NRRRA Booth + Open House) – was positive feedback and networking

Quarterly Report Posted (2018 Quarter 4) – posted on the pooled fund website.

Working with States SPR people on funds this month – Ben will contact states to make sure contributors have transferred money.



Associate Membership dues due July 1, 2019 – details will be sent out soon (\$2,000)

Ideascale ideas for teams to be removed – keep MnROAD test section innovation (push for ideas)

NRRRA Workshop in Minnesota (May 21 – 23, 2019)

(Worel)

Website: <http://www.dot.state.mn.us/mnroad/nrra/pavementconference/index.html>

- May 21 – BIM for Pavements (University of Minnesota – St Paul)
- May 22 – NRRRA Focus Workshop (City of Maple Grove, MnROAD tour, Reception)
 - Team Overviews (Team leads or designee)
 - Committee Breakout Topics Needed (due in March) – 1 hour/Team
- May 23 – NRRRA formal Conference (University of Minnesota – St Paul)
 - Committee Breakout Topics Needed (due in March) – 1 hour/Team
- 4 Paid Trips per NRRRA State – details will be coming out soon

Short Term Research

(Worel)

Current SRF Contract – see table below.

	Task	Status/Needs
1	HMA - Tack Coats	Finished
2	HMA - Longitudinal Joint Construction Performance	Finished
6	PCC - Design and Performance of PCC Unbonded Overlays	70% 1st Draft Specifications Summarized
7	PCC - Repair of Joint Associated Distress Pavements	Need a Work Plan
3	Geo - Larger Subbase Materials	Deleted – GeoTech Contract Completed
5	Geo - Subgrade Design for New and Reconstructed	Requesting a TAP meeting - need direction/work plan from TAP



	Task	Status/Needs
4	PM - Surface Characteristics of Diamond Ground PCC Surfaces	70% 1st Draft Specifications Summarized
8	PM - Pavement preservation approaches for lightly surfaced roadways	On Hold for clarifications, Identification of Deliverables
	PM - Partial Depth Repairs of Concrete	Starting: Not on our list
9	ICT – E-Ticketing	95% Done – in review

Long-Term Research Projects

(Worel)

- Future
 - Team contract pages under development
 - Activity of the Technical Advisory Panels
 - Development of Scope/Tasks for Contracting
 - Note on contracting
 - EC is reviewing the contracting MnDOT suggestions (Master, TRAP, RFP)
 - The initial work plans will be contracted using MnDOT’s set procurement process (similar to the initial contracts developed for NRRRA) – no assumptions should be made by universities or contractors who are working on the initial plans in getting a contract from MnDOT. Contact Ben Worel if you have any questions.
 - List of Projects – See table below
- Existing – see team pages



Idea #	Team	Approx Cost	Title	Work Plan Development	TAP Members
286	PM	\$ 20,000	NRRRA Spray on Rejuvenator Synthesis	Started	Geib, ?
287	PM	\$100,000	NRRRA - Spray on Rejuvenator Test Sections	Started	Geib, ?
274	PM	\$ 30,000	Service Life Enhancement of Substrates Overlaid with Thin Overlays (UTWBC, Chip Seals & Microsurfacing) for each state	?	Bernard
272	PM	\$ 30,000	Concrete Pavement Restoration (CPR) for Bonded Concrete Overlays of Asphalt (BCOA) (Rigid Team Perfers)	?	This one rigid?
248	Flex	\$ 20,000	NRRRA - Mix Rejuvenator Synthesis (Phase-1)	?	Vrtis (Lead), Oesch, Jo Daniel, West, Eshan, Hassan
285	Flex	\$120,000	NRRRA - Mix Rejuvenator Test Sections (Phase-II)	?	Vrtis (Lead), Oesch, Jo Daniel, West, Eshan, Hassan
236	ICT	\$ 155,000	Evaluation of Levels 3-4 Intelligent Compaction Measurement Values (ICMV) for Soils Subgrade and Aggregate Subbase Compaction	?	
235	ICT	\$ 45,000	Support Importing, Viewing and Analysis of Dielectric Constant Data in Veta	?	
268	ICT	\$ 300,000	HD and VHD Seismic Approaches for Roadway Evaluation	?	
238	GeoTech	\$ 90,000	Mechanistic Load Restriction Decision Platform for Pavement Systems Prone to Moisture Variations	?	
251	GeoTech	\$ 35,000	Environmental Impacts on the Performance of Pavement Foundation Layers	?	
262	GeoTech	\$ 30,000	Permeability of Base Aggregate and Sand	?	
241	GeoTech	\$ 30,000	Improve material inputs into mechanistic design properties for reclaimed HMA Roadways	?	
258	Rigid	\$ 50,000	Construction Report for Jointless FRC Roundabout in Minnesota	?	Maria Masten (Lead)
256	Rigid	\$ 25,000	Incorporate Joint Faulting Model Into BCOA-ME	?	John Donahue (Lead)
289 277	Rigid	\$100,000	Engineered Dowel and Tie Bars combined with LTPP SPS-2 Determination of Causes for Cracking Over Dowel Bars	?	Pete Kemp (Lead)



BIM for Pavements

(Kliethermes)

BIM stands for building information modeling. Trying to bring smart technologies together to improve the life cycles of our assets. For instance, it ranges from 3D design, scanning, automated machine guidance, thermal profiling to maintenance operations.

(Embacher)

- Planning Committee – kick off meeting was on Monday, February 4th
- Workshop topic ideas – send to Embacher by next Wednesday, February 13th
- Booths – if interested in having a booth at the workshop notify Worel or Embacher
- Vendor Trailers – any interest from vendors in having vendor trailers, and/or equipment at MnROAD on day 2 of workshop?

NCAT Study (Demonstration Project)

(Worel)

- Study being completed through NCAT on 70th and 80th street near the MnROAD site.
- Both routes are about 1 mile in length, 2-lane roadway.
- 70th street is on the route to a concrete ready-mix plant, and therefore, has heavy traffic loadings.
- 70th street will have sections of CIR, HIR, FDR and SFDR with asphalt paving as surface layer.
- 80th street will be completed by varying recyclers.
- Does the NRRRA-ICT team have ideas of potential intelligent construction technologies (ICT) to include on these projects?

(Embacher)

Listed possible ICT to demo:

Focus on Building Information Modeling (BIM) as another focus of the demo project. Could include items such as:

- Creation of 3D Models.



- Inclusion of models as contract document and not through the reference information documents (RID).
Would include a digital signature.
- Automated Machine Guidance – Milling Method (3D Milling)
- Automated Machine Guidance – Paving Method (3D Paving)
- E-Ticketing
- Paver Mounted Thermal Profiling
- Intelligent Compaction
- Dielectric Profile Method (equipment demonstrations by various vendors)
- High density of testing to assist with establishment of testing protocol for assistance with compliance with the 23 CFR 637 for the IC and PMTP technologies.