

Meeting minutes: NRRA Intelligent Construction Technology (ICT) team monthly meeting

Date: 11/03/22
Minutes prepared by: Rebecca Embacher, MnDOT
Location: Microsoft Teams

Attendance

Angerhofer, Paul	Kowalski Tim
Bautista, Emil (DOT)	Maskey, Deepak R@DOT
Brett Dean (Guest)	Matt Oman
Clark, Jason (MDOT)	Middleton, Alex
Dai, Shongtao (DOT)	Mike Gallant (HaulHub) (Guest, non-Associate Member)
Danial Mirzaiyanrajeh	Narsingh Laikram
Dao, Lauren (DOT)	Nazarian, Soheil
David Ford	Nicholas Schaefer
De Vries, Jeff	Podolsky, Joseph (DOT)
Donisa, Ciprian	Rea, Robert
Dunn, Curt G.	Sabouri, Mohammad
Dukatz, Erv (Guest)	Siekmeier, John (DOT)
Embacher, Rebecca (DOT)	supraja reddy (Guest)
George Chang	Thangavelautham, Raguparan@DOT
Haaland, Nathan A.	Todd Mansell
Jake Sumeraj	Turgeon, Curt (DOT)
Jim Preston	Worel, Benjamin (DOT)
Joe Korzilius	
John Donahue	

Decisions made

- None

Action items

- Submit for 2023 “Call for Construction” if interested. Due November 15, 2022.
- Contact Lauren Dao if interested in assisting with development of NRRA track at the Minnesota Transportation Conference.

Agenda

- 2023 Transportation Research Board
- 2023 Call for Construction
- Minnesota Transportation Conference and Expo Hall NRRA and ISIC Tracks
- FHWA National E-Ticketing Workshop
- AASHTO Standard Practice for Material Delivery Management Systems
- Veta MDMS Enhancements – contract update
- Asphalt Real Time Smoothness (ARTS) for Asphalt Paving – Contract Update
- Seismic Approach to Quality Management of HMA – Contract Update
- Incorporation of GPR layer thickness into Veta – MnDOT Funded

Next meeting

Date: December 1, 2022

Time: 10:30-11:30AM CST

Location: Microsoft Teams

Agenda items: TBD

Meeting notes

Nebraska DOT

Welcome to Nebraska DOT representative.

2023 Transportation Research Board

See slides.

There will be an interactive workshop for the Dielectric Profile System at TRB from 8-12PM on Thursday. Full agenda is published on the site.

2023 Call for Construction

See slides.

An e-mail went out again with supporting documentation to assist with submitting for the call for construction. Contact Ben Worel with any questions.

2023 Minnesota Transportation Conference and Expo Hall

See slides.

Both NRRRA and ISIC will be putting on 2-day tracks at this event. NRRRA will pay for travel expenses for 1-2 individuals for each state DOT that is participating in NRRRA. The executive committee will finalize the paid attendee count soon. More information to come.

DOTs should be thinking about the future, as to whether they would be interested in hosting the NRRRA annual meeting, as it does not need to take place during the Minnesota Transportation Conference and could piggy back on other state events.

FHWA National E-Ticketing Workshop

See slides.

AASHTO Standard Practice for Material Delivery Management Systems

See slides.

Veta MDMS Enhancements – Contract Update

See slides.

ARTS for Asphalt Paving – Contract Update

See slides.

Seismic Approach to Quality Management of HMA – Contract Update

See slides.

Incorporation of GPR Layer Thickness into Veta – MnDOT Funded

See slides.

National Road Research Alliance (NRRA) Intelligent Construction Technology (ICT) Team

Microsoft Teams Meeting

November 3, 2022

2023 Transportation Research Board (TRB)

- January 8-12, 2023
- NRRA Meeting
 - Late Sunday (1/8) afternoon
 - Meeting being developed ... more information to come
 - Waiting for room assignment yet

2023 Call for Construction

- Call for construction due November 15th
- Review / approvals by MnDOT and NRRRA due back to proposers in December
- Documents sent
 - 2023 NRRRA Call for Construction Work Plan Details (attachment A)
 - 2023 MnROAD Background – MnROAD Cells Availability and Operations Support (attachment B)

MN Transportation Conference and Expo (MTC&E)

- Dates: May 15-17, 2023
- May 17, 2023
 - Half Day – Ethics Topics
- Tracks
 - NRRRA Track (May 15-16)
 - Contact Lauren if track topic ideas.
 - ISIC Track (May 15-16)
 - Total of 10 session hours (50-minutes per session) per Track:
 - Monday (5/15)
 - Tuesday (5/16)

FHWA National E-Ticketing National Workshop

- December 6
 - 8:30AM – 4:30PM
- December 7
 - 8:00 – 3:30PM
- Savannah, Georgia
- Contacts for more information:
 - Kathryn Weisner (kathryn.weisner@dot.gov)
 - Antonio Nieves (antonio.nieves@dot.gov)
- Learn from public sector and industry experts on implementation, expansion, adoption, and the future of e-Ticketing.
- Explore tools, technologies, data management, and federal-aid requirements.
- Network with other agencies, private entities, and e-Ticketing vendors.

AASHTO Standard Specification for Material Delivery Management Systems

- AASHTO Committee of Data Management and Analytics (CDMA)
- Endorsement process = completed
- Balloting closes on Tuesday, November 8th

Veta enhancements - MDMS

- November 2, 2022 – Technical Advisory Panel (TAP) meeting
- Update on schedule and tasks
- Demonstration of front end of MDMS application along with viewing of source (E-Ticketing) data fields
- July 2023 Veta Web MDMS Completion

Next Veta MDMS tasks

- Establishment of test server
 - Agency (TAP) member review of source data
 - Start working with interested vendors in pushing “standardized” data to Veta
- User Interface
 - Calculations
 - Views
 - Testing and contract administration data
 - Agency verification data
 - Manual / automated alerts (verification process)
 - Project-category geofence establishment
 - ...

Asphalt Real Time Smoothness (ARTS) for Asphalt Paving

- <http://www.dot.state.mn.us/mnroad/nrra/structure-teams/intelligent-construction/asphalt-real-time-smoothness.html>
- Final report was sent out to TAP members for review
- Review comments received
- PI finalizing report and responses to comments

Seismic Approach to Quality Management of HMA

- <http://www.dot.state.mn.us/mnroad/nrra/structure-teams/intelligent-construction/seismic.html>
- Contract status = complete
- Final report submitted and published
- Available on the NRRRA website

Incorporation of GPR layer thicknesses into Veta MnDOT funded

- Contract amendment executed
- Basic GPR features: June 30, 2024
- 8-1 Import GPR data
 - Radargram, layer thickness
- 8-4 Mapping features
 - Preconstruction layer thickness, GPR speed, data quality, post-milling layer thickness, anomalies and utility markers
- 8-5.1 Operation filters (file, machine ID, time, location, exclusion, sensor, etc.)
- 8-5.2 Data filters (speed, layer thickness, data quality, etc.)

- 8-2 Identification of in-situ features
 - Layer thickness
 - Anomalies and utilities
- 8-3 Calibration of layer thicknesses
 - Cores, soil borings
- 8-5.3.1 General statistics
 - Univariate
 - Transverse

- 8-5.3.3 Conventional and statistically generated sublots
- 8-5.3.4 3D GPR data analysis (univariate and transverse statistics)
 - Using all 21 sensors
 - Grouping sensors (e.g., 1-3, 10-12, 19-21)
- 8-5.3.5 Graphs
 - Radargrams, layer thickness vs. station, deltas of layer thickness vs. station, depth vs. station for all layers, transverse statistics vs. station
- 8-6 Reports

Thank you again!