Meeting Minutes: NRRA Intelligent Construction Technologies (ICT) Team (Meeting No. 2)

(Agency & Associate Member Meeting)

Date: September 6, 2018
Minutes prepared by: Rebecca Embacher
Location: Skype

Attendance

Agency Members

<table>
<thead>
<tr>
<th>Participated</th>
<th>Affiliation</th>
<th>State Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒</td>
<td>California</td>
<td>Deepak Maskey</td>
</tr>
<tr>
<td>☒</td>
<td>California</td>
<td>Ragu Thangavelautham</td>
</tr>
<tr>
<td>☒</td>
<td>Illinois</td>
<td>Brian Hill</td>
</tr>
<tr>
<td>☒</td>
<td>Minnesota</td>
<td>Rebecca Embacher</td>
</tr>
<tr>
<td>☒</td>
<td>Minnesota</td>
<td>Kyle Hoegh</td>
</tr>
<tr>
<td>☒</td>
<td>Missouri</td>
<td>Bill Stone</td>
</tr>
</tbody>
</table>

Associate Members

<table>
<thead>
<tr>
<th>Participated</th>
<th>Affiliation</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒</td>
<td>GSSI</td>
<td>Roger Roberts</td>
</tr>
<tr>
<td>☐</td>
<td>GSSI</td>
<td>Roger Summerfield</td>
</tr>
<tr>
<td>☐</td>
<td>Infrasense</td>
<td>Ken Maser</td>
</tr>
<tr>
<td>☒</td>
<td>Leica Geosystems</td>
<td>Brad Adams</td>
</tr>
<tr>
<td>☒</td>
<td>Mathy Construction</td>
<td>Erv Dukatz</td>
</tr>
<tr>
<td>☒</td>
<td>Minnesota Asphalt Paving Association</td>
<td>Brandon Brever</td>
</tr>
<tr>
<td>☒</td>
<td>The Transtec Group, Inc.</td>
<td>George Change</td>
</tr>
</tbody>
</table>

Friends

<table>
<thead>
<tr>
<th>Participated</th>
<th>Affiliation</th>
<th>State Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>☒</td>
<td>FHWA – MN</td>
<td>Kevin Kliethermes</td>
</tr>
<tr>
<td>☒</td>
<td>Minnesota</td>
<td>Curt Turgeon</td>
</tr>
<tr>
<td>☒</td>
<td>Minnesota</td>
<td>Ben Worel</td>
</tr>
</tbody>
</table>

Other Attendees: Matt Zellar (Minnesota Concrete Paving Association), Bob Flipczak
Decisions Made

- Agreed on ICT mission statement and goals.
- Agreed to move forward with using the Ideascale for submittal of project ideas.

Action items

- NRRA-ICT Team | Brainstorm items that should be potentially funded by NRRA. Add items to Ideascale prior to October meeting for future discussions by team. The Ideascale link is at: https://mndot-lrrb.ideascale.com/a/ideas/recent/campaign-filter/byids/campaigns/61069/stage/unspecified

Agenda

- Current NRRA – ICT Members
- Mission Statement and Goals
- Meeting No. 1 Summary
- Ideascale

Next Meeting

Date: October 4, 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: Discuss items submitted to Ideascale

Meeting Notes

See attached slides.

Current NRRA – ICT Team Members

Discussed the current agency, associate and friends of this committee.

Mass e-mail was sent out to the Intelligent Construction Technologies (ICT) – Expert Task Group (ETG) to spark interest in NRRA and this newly created team. There has been some interest.

The NRRA – ICT will be brought up again to industry at the next ICT-ETG meeting on October 10, 2018.
Mission Statement and Goals

Reviewed the mission statement and goals. There were no concerns with how they are currently written.

Meeting No. 1 (Agency Meeting)

Provided a summary of the discussions that the agencies had at this first meeting. The objective of this meeting was aimed towards discussing future state funding options between the various pooled funds that are currently related to part of the NRRA-ICT mission. The mission statement was also discussed.

The connection between the following pooled funds was discussed and how to prevent silos among these pooled funds (or groups) and NRRA: TPF-5 (334) – Veta Enhancements, TPF-5 (354) – ProVAL – pavement smoothness, ICT-ETG and SHRP2 R06C – PMTP and dielectric profile method.

The following action items resulted from this meeting: Embacher will send out NRRA ICT team membership opportunities to the ICT-ETG; Stone will discuss NRRA with the TPF-5 (334) pooled fund; Worel will start discussions on how to merge some of these pooled funds to NRRA in the future.

Ideascale

Discussed how MnDOT research services currently uses the Ideascale and that they have opened up the Ideascale for use by NRRA.

Discussed how the Ideascale can be used by the NRRA-ICT team to track project ideas for the team to review. The team agreed that this method would be used.

Requested that the NRRA-ICT team start brainstorming ideas of projects that can be completed by the NRRA-ICT team and enter those thoughts into the Ideascale prior to the October meeting.

The NRRA-ICT team currently has $500,000 potentially allocated for its use. Reminded folks that the Executive Committee makes the final decision on which projects move forward. Consequently, the NRRA-ICT team would prioritize potential projects based upon available budget/funding and submit those that are being proposed to be funded for consideration by the Executive Committee.

Shared where to find the link to enter information into the Ideascale: https://mndot-lrrb.ideascale.com/a/ideas/recent/campaign-filter/byids/campaigns/61069/stage/unspecified

Some project ideas had previously been submitted via e-mail. Requested those individuals to add the proposed projects to the Ideascale for review by the NRRA-ICT team at the next meeting.

The goal is to get the contract paperwork in by the end of December 2018 for execution of work on given projects.
NRRA – ICT Team
MEETING #2 09/05/18

Agenda

Current NRRA – ICT Members
Mission Statement and Goals
Meeting No. 1 Summary
Ideascale
Current NRRA ICT Team Members

Agency Members
- Caltrans, Deepak Maskey
- Caltrans, Ragu Thangavelautham
- Illinois – Brian Hill
- Minnesota – Rebecca Embacher & Kyle Hoegh
- Missouri – Bill Stone

Associate Members
- GSSI – Roger Roberts & Roger Sommerfeld (in process to join)
- Infrasense – Ken Maser
- Leica Geosystems – Brad Adams (in process to join)
- Mathy Construction – Erv Dukatz
- Minnesota Asphalt Paving Association – Brandon Brever
- The Transtec Group – George Chang

Friends
- Minnesota – Curt Turgeon, Ben Worel, Dave Van Deusen

NRRA ICT Team | Mission Statement

ICT includes innovative technologies for:
- planning
- design
- construction
- real-time quality control/monitoring
- management for the lifecycle of infrastructure construction

Activities include:
- short-term & long-term research
- field evaluation and/or demonstration of current and emerging technologies
- partnering with industry to assist with development and deployment of technologies
- creation of tools and resources to assist with deployment efforts
- technology transfer among NRRA partners
- specification development
- providing input to the technology transfer team on what should be marketed
NRRA ICT Team | Goals

Identification of gaps of current construction practices and technologies
Evaluation of recent research and emerging ICT
Construction of test sections, or identification of locations/projects, that can be used to validate (or further develop) a given ICT
Information sharing (e.g., lessons learned, best practices, etc.)
Advancement of ICT and data analysis methods
Creation of tools and resources to assist with deployment and training efforts
Development and refinement of ICT-related standards

NRRA ICT Team | Members

Equipment Manufacturers and Vendors
Highway Construction Contractors
Federal and State Agencies
Researchers and Academia
Consultants
Meeting #1 08/02/18

Agency Member Meeting

Objectives
- State funding to NRRA vs. TPF-5 (334) Pooled Fund
- How to prevent silos
- First review of mission statement

How to Prevent Siloing until 2021
Meeting #1 Action Items

Ben Worel
- Send new team information out to current NRRA members to determine interest to participate with team.
- Create visualization of how to potentially merge TPF-5 (334) and NRRA in the future.

Embacher
- Send out NRRA ICT team and membership opportunities to Intelligent Construction Technologies – Expert Task Group

Bill Stone (Missouri)
- Discuss NRRA with TPF-5 (334) pooled fund
Ideascale

Intelligent Construction Technologies Team
Submit New Ideas for Intelligent Construction for MnROAD research
The NRRA ICT team is comprised of technical experts in the area of intelligent construction technologies (ICT). ICT includes innovative technologies for planning, design, construction, real-time quality control, monitoring, and management for the lifecycle of infrastructure construction. The ICT team's

MN Transportation Research Collaboration Site
NRRA – Intelligent Construction Technologies
Welcome Ideas

NRRA – INTELLIGENT CONSTRUCTION TECHNOLOGIES
Support Importing, Viewing and Analysis of Dielectric Constant Data in Veta
Veta is a map-based tool for viewing and analyzing geospatial data, currently including intelligent compaction (IC), paver-mounted thermal profiling (PMTP), and laser test rolling. It is developed and continuously enhanced under the sponsorship of MnDOT and TPF Pooled Fund Study “TPF-0234: Enhancement to the Intelligent Construction Data Management System (Veta) and Implementation”. It is required in the FHWA IC specifications. MORE
Submitted by rebecca.embacher (@rebecca.embacher) 4 minutes ago

NRRA – INTELLIGENT CONSTRUCTION TECHNOLOGIES
Independent Verification of Paver Mounted Thermal Profile (PMTP) Surface Temperature Measurements
FHWA 23 CFR 637.207 states that quality control sampling and testing results may be used as part of the acceptance decision provided that the quality of the material has been validated by the verification sampling and testing. The verification testing shall be performed on samples that are taken independently of the quality control samples. As a result of SHRP-RO6C many states are moving forward with deployment of the MORE
Submitted by rebecca.embacher (@rebecca.embacher) 15 minutes ago
Additional Ideas Submitted to NRRA – ICT Team

Evaluation of Levels 3-4 Intelligent Compaction Measurement Values (ICMV) for Soils and Subgrade and Aggregate Subbase
Lower Cost Highway Noise Abatement Using Sound Waves
Technology Transfer – Intelligent Compaction and Paver Mounted Thermal Profiling Support