

National Road Research Alliance Meeting

Meeting Notes – February 14, 2017

1. Welcome

a. Attendance

Caltrans (Joe Holland, Ron Jones (replaced Ken Darby))
Illinois (Charles Wienrank, Sheilia Beshears)
Michigan (Curtis Bleech, Steve Bower)
Minnesota (Glenn Engstrom) – Missing Linda Taylor
Missouri (John Donahue) – Missing Dave Ahlvers
Wisconsin (Steve Krebs, Barry Paye)
LRRB (Lyndon Robjent) – Missing Paul Oehme

MnDOT Support Staff – Ben Worel, Jeff Brunner, Malysa Cartier (notetaker)

2. Pooled Fund Status

a. Marketing - Member Status

- i. Texas, Florida, New York (Ben presenting at the their March Asphalt Conference), Pennsylvania being pursued
- ii. 23 Associates possible 4-5 more in the next month (UTEP, University Pittsburg, UC Davis).
- iii. Research Partnerships being developed with UTEP \$10,000 for IC testing of unbound materials

b. Current Budget Overview

- i. Budget was covered for the 5% marketing, 30% tech transfer, 65% long term research. Updated budget attached to this document.
- ii. Savings after working with the NRRR teams with less sensor needs, income from UTEP, MnDOT will do construction inspection has freed up funding for the long term research bring the funding up to 1.36 million.

c. Acknowledgement of Past Members –

Action Item → Thank you Letters will be developed for:

1. Lev Khazanovich - University of Minnesota
2. Girum Merine - Wisconsin PCC Team Member

3. NRRR Team Update

a. MnROAD Construction Update

- i. Construction plan turn in is this week.
- ii. Teams focused on the details needed for the March 24 construction letting. This focus on construction has caused the tech transfer and long term research development to be delayed while the construction details were developed. The teams now starting this week will focus on tech transfer and long term research development.
- iii. The partial depth repairs/diamond grinding and compacted concrete pavement (CCP) will be contracted through research partnerships with MnDOT and currently is being developed for this summer.

b. Technical Team Updates

- i. Now meeting 2X/month this spring
- ii. Status of Long Term and Tech Transfer activities (handout)
 1. Focus on construction now moving to update the tasks needed for the Long term research. Handout shows progress.
- iii. Future Process for Tech Transfer Ideas (approval of MnDOT Time?)

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Action item → MnDOT Formalize the process for the Tech Transfer ideas to the executive committee for comment. Note the technical teams already reviewed and oked the process on the status of the tech transfer ideas.

- iv. Rigid idea – Funding idea fibers (group decided to hold off on that item till other areas of NRRRA are developed. They also wanted to see how the investment of fibers in PCC for a 1 mile road in Minnesota fit into the long term research plan which right now is not noted.
- c. Technology Transfer Team
 - i. Survey done for workshop ideas – did not show any leaders for the 5 who responded

4. NRRRA Conference Planning (handout)

- a. Timing
 - i. May 23 – EC Meeting / Workshop / MnROAD Tour / Dinner
 - 1. Held in Albertville city hall and MnROAD
 - 2. Workshop topics were discussed

Action Item → The Executive Committee has asked the Tech Transfer team to propose workshop topics and how to make the whole day for the workshop.

Action Item → MnDOT setup an Executive Committee meeting one week ahead of the event to cover a face to face meeting or to minimize the time needed.
 - ii. May 24 – NRRRA Pavement Conference

Action Item → The Executive Committee has asked the Tech Transfer team to propose conference layout and case studies and report back.
 - iii. Sharing the winter meetings. Example MnDOT in spring and then other state host a winter meeting. Also discussion on separating the NCAT sponsor meeting with NRRRA some to help states schedule trips.
- b. Review Agenda
 - i. Workshop/Topics – see above
 - ii. Open House
 - iii. Speakers
 - iv. Topics
 - v. Case Studies

Deadlines for ideas on the web – March 15th

Deadlines to finalize by NRRRA – April 1st
- c. NRRRA Participation
 - i. Currently need names from each state (Travel Arrangements)
 - ii. Discussion related to 2-4 state travel

Action Item → MnDOT send out travel letter again to the states

5. NRRRA Discussion

- a. Strategic Direction
 - i. Meeting Frequency for Executive Committee
 - ii. Technical Teams
 - iii. Tech Transfer Team
 - iv. Glenn shared with the group the need to review our initial plans and where we are at now to provide the biggest impact for our investments. This topic will be a part of future discussion with the NRRRA executive committee.
- b. Funding Proposals Discussion

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Action Item → email will be sent out to vote on funding

- i. Sensors - \$159,000
- ii. Inspection - \$50,000
- iii. Monitoring (construction/long term) – \$279,000
- iv. Short Term Tech Transfer (MnDOT Time) - \$30,000
- v. Concrete Fibers - \$50,000 (this was removed from the discussion until a research work plan shows the benefit to a NRRRA study).

6. Open Discussion

Action Item → Next Meeting in April – Develop doodle pole

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| NRRA Overall Budget - Updated 2/14/2017 | | | | |
|--|------------------------|---|-------------------------|---|
| | Start - May 2016 | | | |
| | End - Dec 2018 | | | |
| | Income: | States | \$ 2,700,000 | |
| | | Associates | \$ 144,000 | |
| | | FHWA | \$ 10,000 | |
| | | Total | \$ 2,854,000 | |
| NRRA Overall Budget | | | | |
| 3 year totals (2016-2018) - no money spent in first 6 months of project | | | | |
| NRRA Percent Focus Area | Remaining Funds | Split | Dollars Budgeted | Actions |
| 5% Marketing | \$ 142,700 | 90% | \$ 128,430 | MnDOT Staffing |
| | | 5% | \$ 7,135 | Promotional Items |
| | | 5% | \$ 7,135 | Printing |
| 30% Tech Transfer | \$ 856,200 | 27% | \$ 230,000 | Approved - Events, meetings, pavement conference |
| | | 9% | \$ 80,000 | Approved - Communication (Written, Newsletter, video, Website) |
| | | 37% | \$ 320,000 | Approved - Research Implementation - Tech transfer Writeups |
| | | 6% | \$ 50,000 | Approved - Equipment |
| | | 4% | \$ 30,000 | Grad Engineer to start tech transfer documents |
| | | 17% | \$ 146,200 | Non-Approved Tech Transfer Funding to use |
| | | 9% | \$ 159,130 | Sensor Purchase |
| 65% Research | \$ 1,855,100 | 3% | \$ 50,400 | Inspection (MnDOT) |
| | | 15% | \$ 279,318 | MnROAD Staff |
| | | 74% | \$ 1,366,252 | Research Contracts (2 year studies) Eight Projects Contracted at |
| | | | | \$ 170,782 |
| | | | | Proposals to LRRB for 3 project cost share and partnerships |
| Construction | \$ 2,500,000 | MnDOT Funding of 36 - 500' equivalent test cells | | |
| | \$ 5,354,000 | | | |

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Currently have 1.35 million (~8 projects at 169K each) for long term research

NRRA Long Term Research Status

| NRRA Team | Title | Work Plan Construction | Work Plan Tasks | Funding Source Dollars Time | Contract Status | Comment |
|------------------|---|-------------------------------|------------------------|------------------------------------|------------------------|--|
| Flex | HMA Overlay and Rehab of Concrete | 100% | 25% | NRRA - \$ __ month | | Tie two studies together? |
| Flex | Methods of Enhancing Compaction | 100% | 5% | | | |
| Flex | CIR and CCPR Recycling | 100% | 25% | LRRB - \$ __ month | | |
| Rigid | Fiber Reinforced Concrete Pavements | 100% | 75% | NRRA \$ LRRB \$ __ month | | Interstate and city street application that could be tied together |
| Rigid | Long Term Effects of Diamond Grinding | 100% | 75% | NRRA \$ __ month | | |
| Rigid | Early Opening Strength to Traffic | 100% | 75% | NRRA \$ __ month | | |
| Rigid | Optimizing the Mix Components for Contractors | 100% | 75% | NRRA \$ __ month | | |
| Rigid | Roller Compacted Concrete for Local Streets | 100% | 75% | NRRA \$ LRRB \$ __ month | | |
| Geo | Recycled Aggregates in Aggregate Base | 100% | 50% | NRRA \$ __ months | | Combine with recycled? |
| Geo | Larger Subbase Materials | 100% | 50% | NRRA \$ __ months | | |
| PM | Maintaining Poor Pavements | 100% | 15% | NRRA - \$ __ month | | |
| PM | Partial Depth Repair | 90% | 30% | NRRA - \$ __ month | | Tie to TT Topic also |

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NRRA Technology Transfer Topics (includes other four teams)

Proposed Process (discussed in February meetings for EC action on)

1. **WP** - NRRA members develop workplan
2. **Data** - NRRA members provide information
3. **1st Run** - MnDOT Grad Engineer Pull together initial document (paid by NRRA)
4. **NRRA FB** - NRRA members review and develop needed steps
 - a. Provide feedback for Further Action (Step 4)
5. **2nd Effort** - Further Action
 - a. Consultant Efforts ~ \$12K/Topic of NRRA funds – Shooting for March 1st
 - b. MnDOT Grad Finish
6. **Publish** - NRRA Publish

| NRRA Team | Title | Proposed Process – Percent Done | | | | | | Comment |
|-----------|--|---------------------------------|----------------|-------------------------------|-------------------|----------------------------------|-------------------|---|
| | | Step 1 WP | Step 2 Data | Step 3 1 st Run | Step 4 NRRA FB | Step 5 2 nd Effort | Step 6 Publish | |
| Flex | Tack Coats | 75% | 85% | 1 st Draft | | | | Test Topic for each group Need expected tasks reviewed |
| Flex | Longitudinal Joint Construction Performance | 60% | 10% | | | | | Need expected tasks reviewed |
| Rigid | Design and Performance of Concrete Unbonded Overlays | 35% | | | | | | Need expected tasks reviewed |
| Rigid | Repair of Joint Associated Distress Pavements | 5% | | | | | | Need expected tasks reviewed |
| Geo | Larger Subbase Materials | 75% | 40% | | | | | Need expected tasks reviewed Will this be done in “research” project in geotechnical topics? |
| Geo | Subgrade Design for New and Reconstructed | 15% | | | | | | Need expected tasks reviewed |
| PM | Surface Characteristics of Diamond Ground PCC Surfaces | 60% | | | | | | Need expected tasks reviewed |
| PM | Pavement preservation approaches for lightly surfaced roadways | 5% | | | | | | Need expected tasks reviewed |
| PM | Partial Depth Repairs of Concrete | 15% | | | | | | Need expected tasks reviewed Tie to Rigid Team and LT Research |

Note - When contracted out will hire a contractor to do less than 100K of effort