1. **Welcome/Introductions**
   1. Introductions
   2. Round Robin / Announcements

**Notes: Carol Aldrich is new executive committee representative from Michigan DOT**

1. **Membership**
   1. 6 States / LRRB / ND (after the meeting notes – ND has joined!)
   2. 45 Associates + 7 (Trimble, GSSI, Hardrives, University of St Thomas, Leica Gosystems, TOPCON, The Transtec Group to finalize contracts)
   3. Start Date = Feb 22, 2016
   4. End Date = Feb 22, 2021

**Notes: we are at about the half way point in the alliance**

1. **Budget**
   1. Budget Line item details (attached)
   2. Spending Plan (Approved March 2018)

Remaining Budget Expected ($2,474,000 Available / $2,460,000 below)

Funding from years 4 and 5 extension

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| --- | --- |
| $60,000 | CCP Concrete Funding for Missouri (in progress) |
| ~~$800,000~~  **$400,000** | Monitoring MnROAD field data – 2 years @ $400K (in progress - Discuss)  **(MnDOT will cut this cost to $200K/year or $400K total)** |
| ~~$400,000~~  **$200,000** | Possible Tech Transfer Implementation of NCHRP products in the states (Discuss)  **(Decision to cut this to $200K and see what can be done)** |
| $500,000 | Intelligent Construction Technology Funding (working on - new team budget) |
| $700,000 | 4 new Long Term Research Projects ~180K team (working on) |

* 1. Pooled Fund Contract Timelines

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| --- | --- |
| November 2018 | Teams Discuss |
| December 2018 | Teams Discuss/Vote |
| December 15th 2018 | Team Final Work Plan |
| February 2019 | 2nd wave of contracts could start |

**Notes: Discussion of what and where to spend some unencumbered funds. Ben suggests some might be spent on future Tech Transfer projects involving technical writing. John Donahue talked about NCHRP reports and some of the work he’s been doing on rejuvenators. Glenn spoke on NCHRP reports around environmental factors we may need to include in future project decisions, something we need to keep an eye on. General discussion about what NRRA should do with national research that is significant but not generated by our alliance. Maybe make it part of each team meeting agenda, e.g. what’s hot or trending in the pavement industry?**Glenn encouraged state members to talk to their technical experts about ideas for research projects and tech transfer items.  We can use NRRA funds to get things done that may not be happening under their normal state funding process..  NRRA funds can be used to supplement their existing programs.

1. **Team Updates**
   1. Technical Teams - Contracts ongoing – see second page
   2. Idea Scale (Development of Research/Test Sections – as of Monday)

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| --- | --- |
| NRRA – Rigid Team | 11 |
| NRRA – Geotechnical Team | 9 |
| NRRA – Intelligent Construction Technologies | 4 |
| NRRA – Flexible Team | 1+3 |
| NRRA – Pavement Maintenance Team | 0+2 |
| MnROAD Maintenance/Rehabilitation | 0 |
| MnROAD Test Sections (5 moved to technical groups) | NA |

**Notes: Went over the ideascale tool and some of the ideas submitted. Talked about voting, i.e. that we are having all members vote but their votes will be organized by Agency members and associate members. Agencies will have final votes with final approval from the Executive.**

**Notes: MnDOT has a new Master Agreement List being developed for Universities to join a “pre-qualify list” for research projects. MnDOT will share this request for Universities to the NRRA University members. This is the list that MnDOT uses for NRRA projects and expects to use in the future starting in 2019 (not sure exact month at this time).**

* 1. Concern over participation on individual teams – discussion

**Notes: It was understood that everyone is busy and that NRRA is going in the right direction. MnDOT will review the team members and make suggestions if state membership is missing.**

1. **Updates of NRRA member activity**
   1. Cargill Construction – Anova rejuvenator being used at MnROAD transitions in October
   2. Compacted Concrete Pavement (CCP) - Missouri Effort this week
   3. Executive Committee Member Feedback/Rollcall
2. **Communication and Marketing**
   1. Report on Status of Social Media Outreach
   2. Newsletter Stories
   3. NRRA Research Pays Off – November 20th Long Term Research Day

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| --- | --- | --- |
| **Time** | **Presenter** | **Topic** |
| 9 am | Bora Cetin | [Determining Pavement Design Criteria for Recycled Aggregate Base and Large Stone Subbase](http://www.dot.state.mn.us/mnroad/nrra/structureandteams/geotechnical/longterm1.html) |
| 9:30 am | Manik Barman | [Performance Benefits of Fiber-Reinforced Thin Concrete Pavement and Overlays](http://www.dot.state.mn.us/mnroad/nrra/structureandteams/rigid/longterm2.html) |
| 10 am | Hamed Sadati | [Reduced Cementitious Material in Optimized Concrete Mixture](http://www.dot.state.mn.us/mnroad/nrra/structureandteams/rigid/longterm1.html) |
| 10:30 am | Joe Korzilius | [Maintaining Poor Pavements](http://www.dot.state.mn.us/mnroad/nrra/structureandteams/preventivemaintenance/longterm1.html) |
| 1:00 pm | Eshan Dave | [Developing Best Practices for Rehabilitation of Concrete with Hot Mix Asphalt (HMA) Overlays related to Density and Reflective Cracking](http://www.dot.state.mn.us/mnroad/nrra/structureandteams/flexible/longterm2.html) |
| 1:30 pm | Lev Khazanovich | [Evaluation of Long-Term Impacts of Early Opening of Concrete Pavements](http://www.dot.state.mn.us/mnroad/nrra/structureandteams/rigid/longterm3.html) |
| 2 pm | Braun Intertec | Partial Depth Repair |
| 2:30 pm | American Engineering and Testing | Cold Central Plant Recycling |

**Notes: Bob went over the communication numbers and reach for the newsletter, LinkedIn, YouTube and Twitter. Also talked about pushing our new reports using a variety of media including and especially print. Suggestion to include a Test Cell Update in each monthly newsletter. Discussed upcoming RPO webinar (November 20th) featuring NRRA long term research –one year out—and it met with approval.**

1. **Other Items of Discussion**
   1. TRB Meeting with NRRA
      1. Last years efforts
   2. Open Discussion

**Notes: NRRA will again fund states travel to attend TRB in 2019. Glenn Engstrom will send out an email to the state members to see who is interested. MnDOT will coordinate with the individuals on the travel details. NRRA will also work to reserve a room at TRB again this year.**

**NRRA Contracts – Projects all started spring 2018**

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| **NRRA Short Term Technology Transfer Topics**  SRF Consulting under contract   |  |  | | --- | --- | | **NRRA**  **Team** | **Title** | | Flex | Tack Coats (Done) | | Flex | Longitudinal Joint Construction Performance (Done) | | Rigid | Design and Performance of Concrete Unbonded Overlays | | Rigid | Repair of Joint Associated Distress Pavements | | Geo | Larger Subbase Materials  (Done apart of LT Research effort) | | Geo | Subgrade Design for New and Reconstructed | | PM | Surface Characteristics of Diamond Ground PCC Surfaces | | PM | Pavement preservation approaches for lightly surfaced roadways | | TT | E-ticketing Write-up (done) | | **NRRA Long Term Research**   | **NRRA**  **Team** | **Title** | **Contractor** | | --- | --- | --- | | Flex | **HMA Overlay of PCC & Methods in Enhancing Compaction** | University of New Hampshire  (Master RFP) | | **Cold Central Plant Recycling** | American Engineering and Testing  (TRAP Direct) | | Rigid | **Fiber Reinforced Concrete Pavements** | University of Minnesota Duluth  (Master Direct) | | **Early Opening Strength to Traffic** | University of Pittsburgh  (Master Direct) | | **Optimizing the PCC Mix Components** | Iowa State  (Master Direct) | | Geo | **Recycled Aggregates and Larger Subbase Materials** | Iowa State  (Master RFP) | | PM | **Maintaining Poor Pavements** | SRF Consulting  (TRAP Direct) | | **Partial Depth Repair** | Braun Intertec  (TRAP Direct) | |

**NRRA Ideas Proposed (may include MnROAD)**

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| **Team** | **Title** | **URL** | **Submitted by** |
| Flex | HMA Reflective Cracking Study - HMA over HMA | <http://ideascale.com/t/UDCyZCak8> | Ben Worel |
| Flex | Thick Lift HMA Paving Layers | <http://ideascale.com/t/UDCyZCak6> | Ben Worel |
| Flex | Graphite Nano Platelets with Taconite Filler | <http://ideascale.com/t/UDCyZCaeJ> | Mihai Marasteanu |
| Flex | NRRA Rejuvenator Synthesis (Phase-1) and Rejovenator Research/Test Sections (Phase-2) | <http://ideascale.com/t/UDCyZCak9> | Ben Worel |
| Geo | Permeability of Base Aggregate and Sand | <http://ideascale.com/t/UDCyZCamc> | Terry Beaudry |
| Geo | Evaluation of the Performance of Pavement Base Layers Built with Proprietary and Non-Proprietary Stabilizers | <http://ideascale.com/t/UDCyZCall> | Bora Cetin, Cassandra Rutherford, Halil Ceylan |
| Geo | In-Situ Compaction Moisture Performance Test Device for Pavement Foundation Layers | <http://ideascale.com/t/UDCyZCalk> | Bora Cetin & David White |
| Geo | Environmental Impacts on the Performance of Pavement Foundation Layers | <http://ideascale.com/t/UDCyZCalj> | Bora Cetin, William Likos, Tuncer Edil, Jeramy Ashlock |
| Geo | Test Design Thickness of the Soil Surcharge Lad Required over Compacted TDA to Safely Construct a Quality High-Volume Roadway | <http://ideascale.com/t/UDCyZCali> | Monte Niemi |
| Geo | Investigating Four Properties of Tire Derived Aggregate (TDA) in a Storm Water Infiltration System | <http://ideascale.com/t/UDCyZCalh> | Monte Niemi |
| Geo | Improve inputs into MnPAVE for design fof HMA Roadways | <http://ideascale.com/t/UDCyZCakE> | Terry Beaudry |
| Geo | Rehabilitation of Full Depth Asphalt Pavements | <http://ideascale.com/t/UDCyZCakD> | Terry Beaudry |
| Geo | Mechanistic Load Restriction Decision Platform for Pavement Systems Prone to Moisture Variations | <http://ideascale.com/t/UDCyZCajI> | Majid Ghayoomi |
| ICT | Lower Cost Highway Noise Abatement - "Invisible Noise Wall" | <http://ideascale.com/t/UDCyZCahy> | George Chang |
| ICT | Evaluation of Levels 3-4 Intelligent Compaction Measurement Values (ICMV) for Soils Subgrade and Aggregate Subbase Compaction | <http://ideascale.com/t/UDCyZCahx> | George Chang |
| ICT | Support Importing, Viewing and Analysis of Dielectric Constant Data in Veta | <http://ideascale.com/t/UDCyZCahJ> | Rebecca Embacher |
| ICT | Independent Verification of Paver Mounted Thermal Profile (PMTP) Surface Temperature Measurements | <http://ideascale.com/t/UDCyZCahI> | Rebecca Embacher |
| PM | MnROAD Pothole Product Evaluation | <http://ideascale.com/t/UDCyZCak7> | Ben Worel |
| PM | Evaluation of Taconite and Calcined Bauxite High Friction Surface Treatment (HFST) | <http://ideascale.com/t/UDCyZCagr> | Larry Zanko |
| Rigid | Rapid Thin Pavements with Helix-CTS' Rapid Set® Technology | <http://ideascale.com/t/UDCyZCamP> | Luke Pinkerton |
| Rigid | Techniques to ensure joint deployment in concrete pavements | <http://ideascale.com/t/UDCyZCamJ> | Tom Burnham and Maria Masten |
| Rigid | Development of correlation between fault measurements from manual faultmeters and laser-based profilometers | <http://ideascale.com/t/UDCyZCamE> | Tom Burnham |
| Rigid | Construction report for joint-less fiber-reinforced roundabout in Minnesota | <http://ideascale.com/t/UDCyZCals> | Burnham and Masten |
| Rigid | Review performance of RCC shoulders in MnROAD Cells 505, 605, 306, 406 | <http://ideascale.com/t/UDCyZCalr> | Tom Burnham and Tumer Akakin |
| Rigid | Incorporate joint faulting model into BCOA-ME | <http://ideascale.com/t/UDCyZCalq> | Tom Burnham |
| Rigid | Field validation of ASTM C1609 results for fiber reinforced concrete | <http://ideascale.com/t/UDCyZCalp> | Tom Burnham |
| Rigid | Characterize long term performance of retrofit dowel bar mortars | <http://ideascale.com/t/UDCyZCalo> | Tom Burnham and Matt Zeller |
| Rigid | Investigation of MnROAD LVR loop materials | <http://ideascale.com/t/UDCyZCak1> | Tom Burnham |
| Rigid | Optimization of thickness design for precast concrete pavement panels | <http://ideascale.com/t/UDCyZCaku> | Tom Burnham |
| Rigid | Improved sealants materials for single saw-cut joints | <http://ideascale.com/t/UDCyZCakt> | Tom Burnham |

