

National Road Research Alliance Geotechnical Team Feb Meeting

Terry Beaudry
Reclamation/Grading Engineer

Agenda

1. Welcome and Introductions
 - New Members/New Attendees Introduction
2. General NRRRA Update
 - Review of 2021-2022 NRRRA Research and MnROAD Construction Request Timeline
 - Review of 2021 NRRRA Research Idea Form
 - *Brainstorming Ideas for NRRRA Phase 2 and MnROAD Mainline Construction*
3. Update Ongoing Research Projects
4. Questions/Requests

General NRRRA Update

- Review of 2021-2022 NRRRA Research and MnROAD Construction Request Timeline
- Review of 2021 NRRRA Research Idea Form
- *Brainstorming Ideas for NRRRA Phase 2 and MnROAD Mainline Construction*
- RPO:
 - February 16: “*Comprehensive Pavement Evaluation: Going beyond the surface to make the right decisions*” presented by Ken Maser, Infrasense and Dave Hein, Rogers

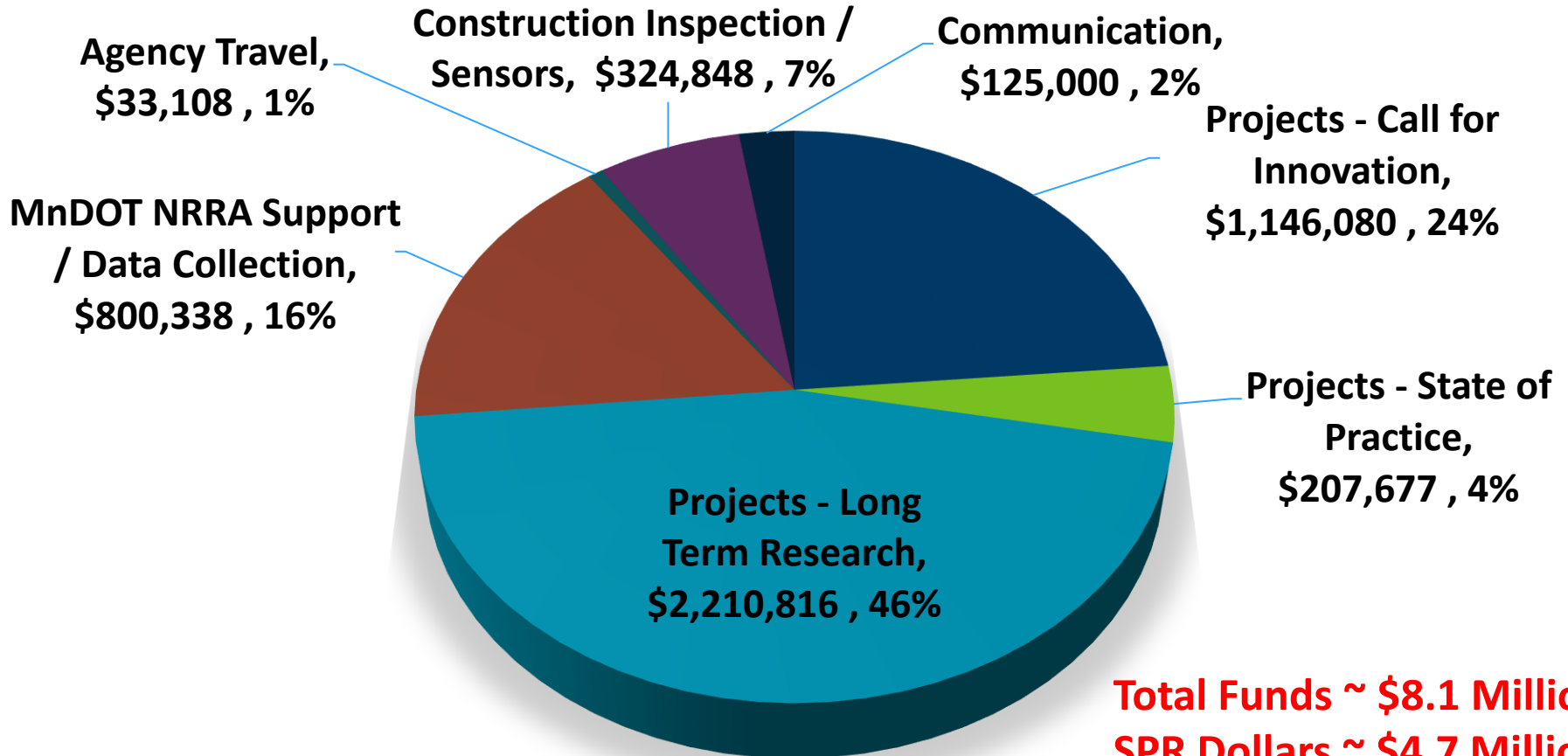


National Road
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mndot.gov/mnroad/nrra

Phase-II Research and Construction Development

National Road Research Alliance Phase-I/Phase-II Funding Summary



Total Funds ~ \$8.1 Million
SPR Dollars ~ \$4.7 Million
Ends – February 22, 2021

Other Funding Contributions – above NRRRA SPR Dues

- MN Construction = \$3,132,681
- MO Roller Compacted Const/Research = \$275,000
- Associate Match Call for Innovation = \$163,746

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Phase-II Philosophy

Sustainability / Resiliency

- Four main sustainability focus areas based on a combination of internal priorities, executive directives, and legislative requirements.
 1. Minimize the impact of our operations on the climate and our environment.
 2. Reduce greenhouse gas emissions from the transportation sector.
 3. Improve the resilience of our transportation system.
 4. Promote public health and healthy communities.

Intelligent Construction

- Supported by including Veta into NRRRA and dedicating funding towards intelligent construction

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Initial Idea - Timelines

February

NRRA Teams Discuss Idea

2-Pagers Developed by Members
(Feb 19th)

State Technical Members
Vote on Ideas (narrow down)

March

NRRA Teams Discuss Written Ideas
(March 3-4)

Continue to develop ideas
Test Sections/Sensors/Research
Due – March 31st

April

Executive Committee Review
Early April

NRRA Technical Teams

- Currently working on idea development
- Output – develop top 4-5 prioritize list of ideas
 - 2-Pagers
 - Possible 5 min video

NRRA Executive Committee

- April Meeting
- Review and Approve Ideas
- Help set the MnROAD Construction efforts

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- **Track Ideas – Assign a “Research” Coordinator (MnDOT Staff)**
 - **Start with today’s meeting send ideas to coordinator**
 - **Issues with common online system**
 - **Working on a system to use**
- **Written 2-pager**
- **5 min Video Ideas once written – one idea**



2021 Initial Idea Development

2021-2022 NRRRA Research and MnROAD Construction Development
(Form - January 22, 2021)

Initial Proposal is for NRRRA Executive Team to Approve for further development (keep to two pages)

Short Research Title:	
NRRRA Team(s):	
Research/Synthesis:	Research or Synthesis?
Developed By:	
Email:	
Phone:	

Expected Construction Costs:	\$X,XXX (include funding sources and partnership matches)
Expected Research Cost:	\$X,XXX (include funding sources and partnership matches)
Expected Sensor Costs:	\$X,XXX (include funding sources and partnership matches)
Research Years Expected:	X years
Partnerships:	Detail partnership ideas and who

Research Outline:

What is the purpose and need along with the basic steps to a successfully research effort?

Pavement Test Cell Outline:

What test sections (MnROAD or other roadways) initial ideas?

NRRRA Sustainability/Resiliency and or Intelligent Construction:

How will this project focus on these objectives which are the cornerstone of our NRRRA Phase-II efforts?

+ Implementation Plan:

How is this going to be used by its members?

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Discussion?

Update Research Projects

Project	Team	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8	Task 9 & 10
Determining Pavement Design Criteria for Recycled Aggregate Base and Large Stone Subbase [95%]	MSU/ISU /UWM									In progress
Mechanistic Load Restriction Decision Platform for Pavement Systems Prone to Moisture Variations [90%]	UNH						In progress			
Environmental Impacts on the Performance of Pavement Foundation Layers [85%]	MSU			TAP reviewing	In progress	Hatched area				
Permeability of Base Aggregate and Sand [75%]	UWM			In progress	In progress					
Improve material inputs into mechanistic design properties for reclaimed HMA Roadways [80%]	MSU/ISU				In progress					
Continuous Moisture Measurement during Pavement Foundation Construction [5%]	UTEP	In progress					Hatched area			

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