

**TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT
for
National Road Research Alliance (NRRRA)**

Lead Agency: Minnesota Department of Transportation

INSTRUCTIONS:

Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.

Transportation Pooled Fund Program Project # TPF-5(341) http://www.pooledfund.org/Details/Study/590		Report Period: Quarter 2 (April 1 – June 30, 2018)
Project Title: National Road Research Alliance – NRRRA http://www.dot.state.mn.us/mnroad/nrra/index.html		
Project Manager(s): Glenn Engstrom (MnDOT) Robert Orthmeyer (FHWA)	Phone Number: (651) 366-5531 (708) 283-3533	E-Mail glenn.engstrom@state.mn.us Robert.orthmeyer@dot.gov
Lead Agency Project ID: None	Other Project ID (i.e., contract #): None	Project Start Date: February 22, 2016
Original Project End Date: September 30, 2018 (29 months)	Current Project End Date: February 22, 2021 (60 months)	Number of Extensions: 1 (Approved - Dec 2017 by NRRRA Executive Committee)

Project schedule status → On schedule

Overall Project Statistics:

Total Project Budget	Total Costs obligated to Date for Project	Percentage of Tim and Funding Completed to Date
Years 1-3 → \$2,450,000 (State SPR Funds) This report does not report on non-SPR funding including 150K WI partnership, associate memberships, or the \$3.1 million MnDOT construction funds + (NEW) Years 4-5 \$1,800,000 funding from the existing six member states	Years 1-3 → \$2,388,848 budgeted (\$61,152 SRP still available for use) Note an Estimated \$374K funds are still available of total funding for the Executive Committee to commit in the future + (NEW) Years 4-5 → Spending plan approved but not yet obligated	Time = 45% (27/60 months) SPR Money Year = %

Quarterly Project Statistics:

Total Project SPR Expenses and Percentage This Quarter	Total Percentage of Time Used to Date
TBD	10% this quarter (3/60 months)*

Project Description:

This pooled fund is open for new states and they can join at any time. This pooled fund will help direct and compliment the use of the MnROAD test track for local, regional and national research, tech transfer and implementation needs. Road owner agencies will provide input and participate in the decision making needed for future MnROAD construction and research scheduled in 2017. MnDOT will provide \$2.5 million in construction funding to aid in the development of the next round of test sections at MnROAD to support common goals. Industry and academia will also play an important role to provide critical input on long-term future trends in research and barriers to implementation, including working with their customers and members who play a direct role in implementation.

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):

To date six state agencies and over thirty 50+ industries and academic institutions have become NRRRA members to share their expertise and are learning about new tools and methods to improve and expand upon transportation systems nationally.

- NRRRA short and long term research projects are all under contract and work is progressing
- Long and Short term research projects all have separate online project pages under the teams that are supporting these efforts.
- NRRRA members/Teams have met every monthly again this quarter which also acts as TAP meetings for each teams short and long term research efforts.
- Executive Committee meeting
 - May 23, 2018 Face/Face Meeting apart of the NRRRA Workshop
 - Notes posted online under the EC team page - highlights
 - Funding for years 4 and 5 verbally approved from each state
 - Funding will bring in 1.8 million for years 4 and 5
 - Funding levels for states receiving less SPR dollars than Minnesota was reduced to \$75K/year. The states receiving more SPR dollars than Minnesota stayed at \$150K/year.
 - New team added – Innovative Construction Technologies which will be led by Rebecca Embacher – states will be providing names to make up the new team.
 - Initial plan for spending for years 4 and 5 were approved but now will be developed in more detail with the technical teams.
- 3 Research pays off webinars have been completed.
- Material samples have been shipped to both members and non-members from the 2017 construction and some test results are coming back. These results will be available to the teams and contractors and placed in the MnROAD database.
- See the NRRRA website for details on all the teams' activities.

Anticipated work next quarter:

The following is expected to be completed for next quarter.

- MnROAD staff will be collecting performance data as needed for the NRRRA teams and sharing this data with them. Expect performance field activities to increase in April.
- Continue to collect data being developed from the contracts and partnerships with NRRRA members.
- Continue to update the MnROAD database with data from 2017/2018 including performance and material testing data.
- 8 Long Term Research Contracts efforts will continue with the technical advisory panels (TAP) leading the technical direction – team pages will be updated to show the progress.
- 6 Technical teams will meet once every month that will also include TAP meetings for each short and long term project expected. New team added and being developed.
- ~4 Short Term Research effort is done and the others are being worked on.
- NRRRA Research Pays-Off and Newsletters will be done each month.
- NRRRA Executive Committee meetings will be scheduled in September

- Budget – Executive committee wants to cover the budget in detail in the May 2018 meeting once the construction and research efforts become more formed and more information is known. The group also will look at what funding can be used as EC asked the teams to do and develop.
- 5 new long term research efforts and short technology transfer topics are being developed and will be voted on by the teams to utilize years 4 and 5 funding. The recommendations will go to the executive committee.

Significant Results:

Currently this pooled fund is working well for all the members. We have shared resources and technology with each other related to intelligent construction and have discuss a number to topics in the technical teams. More formal documentation will start to be developed at the contracts are awarded and this work begins.

NRRA is up to 6 state members and at 50+ associate members. NRRA Agencies and Associates members make up the now 6 teams that play an important technical role in setting both the technology transfer and long term research needs. Each team has been active this summer meeting every two weeks to develop and prioritize ideas that fall into each of these categories above to meet both local, state, regional and national research needs. The teams report directly to the NRRA executive committee.

The initial push by each of the NRRA technical teams is to develop long term research needs and the MnROAD test sections that will be used to support these initiatives. MnDOT is providing \$3.1 million of construction funding to support NRRA long term research needs to be built at MnROAD in the summer of 2017. Each team is working to get the final designs and special provisions to MnDOT so the plans can be developed and a formal construction project can be let in March 2017. Long term research includes researching HMA overlays of PCC, enhancing HMA compaction, fiber reinforced concrete, effects of diamond grinding on questionable aggregates, PCC early opening to strength, optimizing PCC cement content, compacted concrete pavements for city streets, cold central plant recycling, recycled aggregate bases, large stone subbases, maintaining HMA and PCC roadways, and PCC partial depth repair. Each topic/test section will provide a resource for future research contracts that are under development by teach team.

Other important team activities include the formation of technology transfer topics. The NRRA technology transfer team has been approved by the executive committee to fund 2 technology transfer topics from each of the four technical teams. Each topics goal is to pull together the existing state and national state of practice so that a common practice or specification can be developed by the members. Prioritized topics include longitudinal joint construction performance, tack coats, design and performance of concrete unbonded overlays, repair of concrete joint related distress, large unbound subbase materials, subgrade design, surface characteristics of diamond ground PCC, and pavement preservation approaches to lightly surfaced roadways. Currently the teams are updating the problem statements so that a MnDOT hired contractor can be hired to complete the work.

More information on these efforts including the long term research and technology transfer topics can be found under each of the [team member's webpage](#).

Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, along with recommended solutions to those problems)

None

Potential Implementation:

See the NRRA team pages for implementation topics that are being developed – TAP members of each of the contracts and teams will be asked to help the development of implementation for the technology transfer team to push with its members. This is a focus area that is probably the hardest part of successful research. The technology transfer team will be focused on this topic in the upcoming months.