

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

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 4 (October 1 – December 31, 2017)
Project Title: National Road Research Alliance – NRR 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 Executive Committee)

Project schedule status → On schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
\$ 2,450,000 (State SPR Funds) This report does not report on non-SPR funding including 150K WI partnership (one year membership), associate memberships, or the 3.1 million MnDOT funds for construction	\$ 773,725 (31% SPR) Based off MnDOT Project cost detail reports	Time = 35% (21/60 months) SPR Money = **%

Quarterly Project Statistics:

Total Project SPR Expenses and Percentage This Quarter	Total Percentage of Time Used to Date
\$ 120,082 ~4.9% (SPR) Based on MnDOT project cost detail reports	10% (3/60 months)*

Project Description:

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 40 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 members/Teams have met every month this quarter but will be meeting by-monthly next quarter due to TAP membership responsibilities.
- Executive Committee has meet online in December and have approved the following
 - Extension of time to 5 years total
 - Budget lines reviewed and approved – will cover in detail at the May 2018 meeting
 - EC did approve an increase in MnDOT performance monitoring (R1.14 – extra \$120K) to be used starting in the spring 2018
 - Glenn Engstrom noted that MnDOT will cover any extra costs with operating budget for the overruns from the construction monitoring \$40,749, MnDOT inspection increase of \$30,749
- Executive Committee is having the winter meeting in Washington DC for members and possible new members on January 11th - 2 members from each state can travel using NRRRA funding.
- 8 Long Term and 1 Short term research efforts have contractors selected and the contract process has started from the research needs developed by each technical team. Expect all the contracts going by February 1, 2018.
- Research pays off webinars were also done for NRRRA each month this fall.
- Construction report is being developed for NRRRA members.
- Material samples have been shipped to both members and non-members from the 2017 construction.
- 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.

- Continue to update the MnROAD database with data from 2017 including performance and material testing data.
- MnROAD staff will finalizing the MnROAD phase-III construction report.
- 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 the spring.
- 8 Long Term Research Contracts will be finalized and the technical advisory panels (TAP) will have their initial meetings with the contactors and work will begin on each effort.
- Technical teams will meet once every two months due to the extra TAP meetings expected.
- 1 Short Term Research effort is in place with the initial focus on the two flexible topics (tack coat, longitudinal joints) and then working on the pavement maintenance efforts.
- NRRRA Research Pays-Off and Newsletters will be done each month.
- NRRRA Executive Committee meetings will be held every other month.
 - Winter Meeting – Washington DC – online - January 11, 2018
 - Spring Meeting – Online – March (need to set date)
 - Pavement Workshop/Conference (Minnesota) – May 22-24, 2018
- 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 will be needed for years 4 and 5 at this meeting. MnDOT is finalizing a common method for tracking the obligated and spent dollars for this project.

Significant Results:

Currently this pooled fund is just starting up. 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 40+ associate members. NRRA Agencies and Associates members make up the 5 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 – contracting will be started/completed in the next quarter that will enable NRRA to start working.