

**TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT
for
National Road Research Alliance (NRRRA)
Phase – 1 (2016-2021)
Phase – 2 (2021-2025)**

Lead Agency: Minnesota Department of Transportation

| | | |
|---|--|---|
| Transportation Pooled Fund Program Project # TPF-5(341) http://www.pooledfund.org/Details/Study/590 TPF-5(466) https://pooledfund.org/Details/Study/693 | | Report Period: 2023 - Quarter 3 (August 1 – September 30, 2023) |
| Project Title: National Road Research Alliance – NRRRA http://www.dot.state.mn.us/mnroad/nrra/index.html NRRRA quarterly reports for Phase-I and Phase-II are being combined because of existing projects in phase-I that are still ongoing and still pertain to the NRRRA efforts that are being done in phase-II. Both websites will be updated with the same quarterly report. Individual budgets are attached to this quarterly report for both efforts. | | |
| Project Manager(s): TBD (MnDOT) Steve Cooper (FHWA) | Phone Number: | E-Mail stephen.j.cooper@dot.gov |
| Lead Agency Project ID: None | Other Project ID (i.e., contract #): None | Project Start Date: Phase 1 - February 22, 2016 Phase 2 – February 22, 2021 |
| Original Project End Date: Phase 1 - September 30, 2018 Phase 2 – February 22, 2025 | Current Project End Date: Phase 1 – February 22, 2021 Phase 2 – February 22, 2025 | Number of Extensions: Phase 1 - NRRRA Executive Committee extended till 2021) Phase 2 - NA |

Project schedule status → On schedule

Phase – 1 TPF-5(341) Overall Project Statistics:

| Total Project Budget | Total Costs obligated to Date for Project | Percentage of Time and Funding Completed to Date |
|----------------------|---|--|
| \$5,000,000 | SPR Funds Budgeted = \$4,969,303 (99%) Invoices Paid = \$4,441,276 (89%) Funds Remaining = 30,697 | Complete as of Feb 22, 2021 SPR 341 left open till all contracts are complete for Phase-I and audit can be done |

Phase – 2 TPF-5(466) Overall Project Statistics:

| Total Project Budget | Total Costs obligated to Date for Project | Percentage of Time and Funding Completed to Date |
|----------------------|--|--|
| \$7,434,163 | SPR Funds Budgeted = \$7,320,970 (91%) Invoices Paid = \$1,443,453 (19%) Funds Remaining = \$709,356 | Time = 33/60 months (55%) |

Project Description:

This pooled fund phase-II 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. Road owner agencies will provide input and participate in the decision making needed for future MnROAD construction and research scheduled in 2017 (Phase-I) and in 2022 (Phase-2). In Phase-I MnDOT and Missouri have funded construction in both states while Phase-2 MnDOT, Missouri, Wisconsin will fund 2022-2023 construction of test sections. MnROAD will continue 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 ten (14) government agencies and over fifty-five (85+) industry, associations, consultants, 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.

Membership

- Montana and Nebraska joined NRRRA in 2022.
- Many additional NRRRA associates also joined.

Phase-I Projects

- Tech Transfer - 100% of the 13/13 projects complete.
- 2017 Long Term Research – 100% of the 8/8 projects complete.
- 2019 Long Term Research – 64% of the 7/11 projects complete.
- 2019 Call for Innovation Research – 33% of the 2/6 projects complete.
- 2020 Call for Innovation Research – 43% of the 3/7 projects complete.

Phase-2 Projects

- 2021 Long Term Research – 0% of the 0/11 projects complete.
- 2021 Long Term Research – three projects to be contracted in 2023.
- 2023 Call for Innovation – up to \$1,714,652 new research selected in July 2023 which is now in the process of being finalized and contracted. Expect contracting to be done early 2024.
- Two projects are being developed for RFP's in early 2024 including Perpetual Pavements in Wet Freeze Climates and Recycled Binder Availability. Details on the newly funded projects can be found on the NRRRA webpage under projects.

General

- NRRRA Technical Teams have met every month again this quarter which also acts as TAP meetings for each team's short and long-term research efforts.
- See the NRRRA website for details on all the teams' updated activities.
- Monthly Research pays off webinars have been completed and a plan for 2024 topics are developed.
- NRRRA budget for Phase-I and Phase-II are attached at the end of this report.
- 2022 Construction Report is complete now being published.

Anticipated work next quarter:

The following is expected to be completed for next quarter.

- Final contracts for 2 of the RFP will be finalized in 2024.
- Final contract for the Missouri reflective cracking/NCAT additive study that Missouri is funding with SPR dollars.
- Contact member states and their pooled fund dollar commitments.
- Continued work on Phase-I pooled fund efforts and reporting progress in the team meetings.
- Continued work on Phase-2 pooled fund efforts and reporting progress in the team meetings.
- Determine the next (spring meeting for NRRA).

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 sustainability and have discuss a number of topics in the technical teams. More formal documentation will start to be developed as the contracts are awarded and this work begins.

- NRRA includes 14 government members and at 85+ associate members. New agencies/associates are always welcome to join at any time during this phase.
- Many technologies transfer and long-term research needs are completed or under contract. The progress/final products are shown on the NRRA website.
- NRRA members are asked to continue to brainstorm how as a group we can push implementation noting that NRRA has funding to help with this as needed in the form of contracts or travel.

Attachment A (Income Summary)

- Contains the NRRA income summary.

Attachment B (Financial Summary)

- Contains the funding summary along with the research progress by invoices. More detail is listed under the NRRA [team member's webpages](#).

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.

Attachment – A (NRRRA Phase-1 Income) – 10/13/2023 financial Report

| NRRRA Phase-1 | | | | | | | | |
|--|------------|---------|---------|---------|---------|-----------|---------|------------------|
| TPF-5(341) National Road Research Alliance - NRRRA Pooled fund | | | | | | | | |
| Funding income complete | | | | | | | | |
| Current | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | Total |
| CA | Obligation | - | 150,000 | 50,000 | 150,000 | 150,000 | 150,000 | 650,000 |
| | Payment | - | 150,000 | 50,000 | 150,000 | 150,000 | 150,000 | 650,000 |
| IA | Obligation | | | | | 150,000 | | 150,000 |
| | Payment | | | | | 150,000 | | 150,000 |
| IL | Obligation | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 900,000 |
| | Payment | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 900,000 |
| MI | Obligation | 150,000 | 150,000 | 150,000 | | | 300,000 | 750,000 |
| | Payment | 150,000 | 150,000 | 150,000 | | | 300,000 | 750,000 |
| MN | Obligation | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | | 750,000 |
| | Payment | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | | 750,000 |
| MO | Obligation | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | | 750,000 |
| | Payment | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | | 750,000 |
| ND | Obligation | - | - | - | 75,000 | 75,000 | | 150,000 |
| | Payment | - | - | - | 75,000 | 75,000 | | 150,000 |
| WI | Obligation | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | | 750,000 |
| | Payment | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | | 750,000 |
| Illinois Tollway | Obligation | | | | | 150,000 | | 150,000 |
| | Payment | | | | | 150,000 | | 150,000 |
| Totals | Obligation | 750,000 | 900,000 | 800,000 | 825,000 | 1,125,000 | 600,000 | 5,000,000 |
| | Payment | 750,000 | 900,000 | 800,000 | 825,000 | 1,125,000 | 600,000 | 5,000,000 |

Pooledfund.org does not show 150K Illinois Tollway contribution - \$4,850,000 shown on website

Attachment – A (NRRRA Phase-2 Income) – 10/13/2023 financial Report

NRRRA Phase-2

TPF-5(466) National Road Research Alliance - NRRRA Pooled fund

| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | Total |
|---------------------|------------|-----------|-----------|-----------|-----------|-----------|---------|-----------|
| CA | Obligation | | 150,000 | 150,000 | 150,000 | 150,000 | | 600,000 |
| | Payment | | 150,000 | 150,000 | | | | 300,000 |
| FHWA** | Obligation | 488,000 | | | | | | 488,000 |
| | Payment | 488,000 | | | | | | 488,000 |
| GA (Veda) | Obligation | | 25,000 | 25,000 | 25,000 | 25,000 | | 100,000 |
| | Payment | | 25,000 | 25,000 | | | | 50,000 |
| IA | Obligation | | | 75,000 | 150,000 | 150,000 | | 375,000 |
| | Payment | | | 75,000 | | | | 75,000 |
| IL | Obligation | | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | 750,000 |
| | Payment | | 150,000 | 150,000 | | | | 300,000 |
| Illinois Tollway | Obligation | | | 75,000 | 75,000 | | | 150,000 |
| | Payment | | | | | | | - |
| MI | Obligation | 150,000 | 150,000 | 150,000 | 150,000 | 150,000 | | 750,000 |
| | Payment | 150,000 | 150,000 | 150,000 | | | | 450,000 |
| MN*** | Obligation | 150,000 | 150,000 | 746,163 | 150,000 | 150,000 | | 1,346,163 |
| | Payment | 150,000 | 150,000 | 746,163 | 150,000 | 38,816 | | 1,234,979 |
| MO* | Obligation | 550,000 | 150,000 | 150,000 | 150,000 | 150,000 | | 1,150,000 |
| | Payment | 550,000 | 150,000 | 150,000 | | | | 850,000 |
| MS | Obligation | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 | | 375,000 |
| | Payment | 75,000 | 75,000 | 75,000 | | | | 225,000 |
| MT | Obligation | | | 75,000 | 75,000 | 75,000 | | 225,000 |
| | Payment | | | 75,000 | | | | 75,000 |
| ND | Obligation | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 | | 375,000 |
| | Payment | 75,000 | 75,000 | 75,000 | | | | 225,000 |
| NE | Obligation | | | 75,000 | 75,000 | | | 150,000 |
| | Payment | | | 75,000 | | | | 75,000 |
| NY (Veta) | Obligation | | | | | | | - |
| | Payment | | | | | | | - |
| WI | Obligation | 150,000 | 150,000 | 300,000 | | | | 600,000 |
| | Payment | 150,000 | 150,000 | 150,000 | | | | 450,000 |
| Totals | Obligation | 1,638,000 | 1,075,000 | 2,121,163 | 1,300,000 | 1,150,000 | 150,000 | 7,434,163 |
| | Payment | 1,638,000 | 1,075,000 | 1,896,163 | 150,000 | 38,816 | - | 4,797,979 |

MO* - Missouri added 400K to support the Missouri Reflective Cracking/Additive efforts

FWHA** - FHWA added 300K for Carbon Cure PCC and 188K for ICT related efforts

MnDOT*** - MnDOT added 400K for Veta efforts in December 2022 of non-SPR dollars + 196,163 past Veta Funds

Funding Summary - October 13, 2023

Attachment – B (NRRRA Phase-1 Financial Summary and Project Invoicing) – 10/13/2023 financial Report

| NRRRA Phase-1 | | | | | |
|--|--|----------------|---------|----------------------------------|--------------------|
| TPF-5(341) National Road Research Alliance - NRRRA Pooled fund | | | | | |
| For 2023 - quarter 2 report - updated 6/27/2023 | | | | | |
| Funding Group | Description | Funding Totals | Percent | SPR (Money budgeted to be spent) | SPR (Not Budgeted) |
| States (SPR) | Pooled Funds (9 agencies) - Pooled Fund + Wisconsin 150K + 150K Toll | \$ 5,000,000 | | | |
| | Total SPR Encumbered = | \$ 4,969,303 | 99% | | \$ 30,697 |
| | Paid Invoices = | \$ 4,587,687 | 92% | \$ 412,313 | |
| Additional State Funding (Not NRRRA SPR Dollars) | MnDOT Construction Funding for 2017 MnROAD Construction | \$ 3,132,681 | | | |
| | Missouri DOT funding - roller compacted PCC constr and research | \$ 275,000 | | | |
| Total Spending (SPR and Other) | | \$ 8,407,681 | | | |

| SPR Dollars Budget/Spending | | | | | | | | |
|-----------------------------|--------------|---|---|---|--|------------|-------------------|-----------------|
| NRRRA Focus Areas | Effort Type | Item | Project Charge # | General Outcome / Deliverable | Vendors | Encumbered | Payments Invoiced | Payment Percent |
| Marketing (M) | Labor | M1.1 | TPF15341A | MNDOT Labor - (Website, Monthly Newsletter, Written Documents/Marketing) | MnDOT | 189,800 | 189,800 | 100% |
| | Purchase | T1.1 | TPF15341 | Agency travel / meals / meeting room costs | MNDOT PO | 57,499 | 57,499 | 100% |
| Contract | T1.2 | Communication (Written, Newsletter, video, Website) - MnDOT will not charge | | Not Done | | | | |
| Tech Transfer (T) | Contract | T1.3.1 | TPF15341 | Tack Coats | 2016 State of Practice (SRF) top two topics from each team established in 2016 | 95,565 | 95,565 | 100% |
| | | | | Longitudinal Joint Construction Performance | | | | |
| | | | | Design and Performance of Concrete Unbonded Overlays | | | | |
| | | | | Repair of Joint Associated Distress Pavements | | | | |
| | | | | Larger Subbase Materials - Done by Iowa State | | | | |
| | | | | Subgrade Design for New and Reconstructed | | | | |
| | | | | Surface Characteristics of Diamond Ground PCC Surfaces | | | | |
| | | | | Pavement preservation approaches for lightly surfaced roadways | | | | |
| | | | | Partial Depth Repairs of Concrete | | | | |
| | | | | E-Ticketing | | | | |
| Labor | T1.3.2 | TPF15341B | Tech transfer write-ups (MnDOT Labor) - Topics Below | MnDOT | 21,965 | 21,965 | 100% | |
| Contract | T1.5.1 | TPF15341 | HMA – Asphalt Mixture Rejuvenator Synthesis | 2019 State of Practice (WSB) | 92,102 | 92,102 | 100% | |
| | | | PM - NRRRA Spray on Rejuvenator Synthesis | | | | | |
| | | | PM - Concrete Pavement Restoration (CPR) for BCOA | | | | | |
| | | | PM - Service Life Enhancement of Substrates Overlaid with Thin Overlays | | | | | |
| Research (R) | Purchase | R1.1 | TPF15341 | 2017 MnROAD Construction Sensor Purchases | MnDOT PO | 160,679 | 186,221 | 100% |
| | | | | 2018 CCP Missouri Sensor Purchases - broken off the 60K available | | 25,542 | | |
| | Labor | R1.3 | TPF15341C | Inspection (MnDOT) - costs over the initial budget | MnDOT | 97,773 | 97,773 | 100% |
| | MnROAD Labor | R1.4 | TPF15341D | MnROAD Site Staff Labor - additional 120K approved by EC Dec 2017 | MnDOT | 279,318 | 808,593 | 100% |
| | | R2.4 | | Approved \$120K extra funding for monitoring 2018 | | 120,000 | | |
| | | R3.4 | | Approved \$200K extra funding for monitoring 2019 - 2022 adjustment 182K | | 200,000 | | |
| | | R4.4 | | Approved \$200K extra funding for monitoring 2020 | | 183,275 | | |
| | | R1.8 | | Missouri Sensor Labor Costs for 2018 installs | | 26,000 | | |
| | Contract | R1.5 | TPF15341 | PCC Sampling/Testing | AET Consultant | 20,000 | 61,514 | 100% |
| | | R2.5 | | Additional Funding Approved (low initial estimate) | | 41,514 | | |
| | Contract | R1.6 | TPF15341 | HMA Performance Testing (75K original Estimate - will not use in Phase-I) | Not Done | | | |
| | Contract | R1.7 | | Partial Depth Repairs Construction (not in construction contract) | Diamond Surfacing | 40,000 | 78,662 | 100% |
| | | R2.7 | | Additional Funding Approved | | 38,662 | | |
| MnDOT Agreement | R1.8 | TPF15341 | Compacted Concrete Pavement Construction | Missouri DOT Hired University | | | | |
| Contract | R1.9 | | Diamond Grinding Construction (not in const | | Not Done | | | |

Spending Details SPR Dollars Budget/Spending

| NRRA Focus Areas | Effort Type | Item | Project Charge # | General Outcome / Deliverable | Vendors | Encumbered | Payments Invoiced | Payment Percent | | |
|------------------|--------------------------|---|--|---|-----------------|--|-------------------|---------------------|---------------------|--------------|
| Research (R) | 2017 Long Term Projects | R1.10 | TPF15341 | HMA Overlay and Rehab of Concrete and Methods of Enhancing Compaction | UNH | 169,970 | 169,970 | 100% | | |
| | | R1.11 | | Cold Central Plant Recycling | AET Consultant | 99,997 | 99,997 | 100% | | |
| | | R1.12 | | Fiber Reinforced Concrete Pavements | UMD | 145,462 | 145,462 | 100% | | |
| | | R1.13 | | Long Term Effects of Diamond Grinding - \$75 | Not Done | | | | | |
| | | R1.14 | | Concrete Early Opening Strength to Traffic | UofPitt | 149,999 | 149,999 | 100% | | |
| | | R1.15 | | Optimizing the Concrete Mix Components for Contractors | Iowa State | 147,627 | 147,627 | 100% | | |
| | | R1.16 | | Compacted Concrete Pavements for Local Streets - \$80K - Did do in Missouri | Not Done | | | | | |
| | | R1.17 | | Recycled Aggregates in Aggregate Base and Larger Subbase Materials | Iowa State | 225,000 | 225,000 | 100% | | |
| | | R1.18 | | Maintaining Poor Pavements | SRF | 28,725 | 28,725 | 100% | | |
| | R1.19 | Partial Depth Repair | Braun Inertec | 74,925 | 74,925 | 100% | | | | |
| | 2019 Long Term Research | R1.21 | TPF15341 | HMA - Asphalt Mix Rejuvenator Test Sections (added 50K in April 2020) | UNH | 148,981 | 117,379 | 79% | | |
| | | R1.22 | | PM - Spray on Rejuvenator Test Sections | NCAT - 100k | 133,912 | 25,719 | 19% | | |
| | | R1.23 | | ICT - Levels 3-4 Intelligent Compaction Measurement Values (ICMV) for Soils Subgrade/Aggregate Subbase Compaction | Transtec Group | 162,024 | 161,982 | 100% | | |
| | | R1.24 | | ICT - Support Importing, Viewing and Analysis of Dielectric Constant Data in Veta (paid by Veta pooled fund) | Transtec Group | - | - | | | |
| | | R1.25 | | ICT - HD and VHD Seismic Approaches for Roadway Evaluation | Park Consulting | 299,686 | 299,686 | 100% | | |
| | | R1.26 | | Geo - Mechanistic Load Restriction Decision Platform for Pavement Systems Prone to Moisture Variations | UNH | 90,231 | 90,231 | 100% | | |
| | | R1.27 | | Geo - Environmental Impacts on the Performance of Pavement Foundation | Michigan State | 35,000 | 35,000 | 100% | | |
| | | R1.28 | | Geo - Permeability of Base Aggregate and Sand | | 30,000 | 30,000 | 100% | | |
| | | R1.29 | | Geo - Improve material inputs into mechanistic design properties for reclaimed HMA Roadways | | 30,000 | 30,000 | 100% | | |
| R1.30 | | PCC - Construction Report for Jointless FRC Roundabout in Minnesota | | Iowa State | 49,999 | 49,999 | 100% | | | |
| R1.31 | | PCC - Incorporate Joint Faulting Model Into BCOA-ME | | Contracting Uof Pittsburg | 24,999 | 24,999 | 100% | | | |
| R1.32 | | PCC - Engineered Dowel and Tie Bars combined with LTPP SPS-2 Determination of Causes for Cracking Over Dowel Bars | | ERES Consulting | 101,083 | 55,087 | 54% | | | |
| Research (R) | | 2019 Call for Innovation | | R1.33 | TPF15341 | Blending of Higher Strength Aggregates with Recycled Concrete and Marginal Aggregates to Improve Concrete Properties | U of St Thomas | 32,332 | | 0% |
| | R1.34 | | Performance of Concrete Overlays over Full Depth Reclamation (FDR) | ARM | | 15,313 | 15,313 | 100% | | |
| | R1.35 | | Bio-material Maintenance Treatments | Iowa State | | 50,000 | 48,000 | 96% | | |
| | R1.36 | | Innovative Practical Approach To Assessing Bitumen Compatibility As A Means Of Material Specification | Cargill | | 204,119 | 121,686 | 60% | | |
| | R1.37 | | Cold Asphalt Recycling Technologies using Rejuvenating Asphalt Emulsion: Impact; Implementation; Specification | UNH | | 141,440 | 141,400 | 100% | | |
| | R1.38 | | Support Contract for T1.3.1 (SRF) Repair of Joint Associated Distress Pavements | Iowa State | | 4,972 | 4,972 | 100% | | |
| | 2020 Call for Innovation | R1.39 | Pavement-Specific Structural Synthetic Fibers | UMD | 99,792 | 40,000 | 40% | | | |
| | | R1.40 | Understanding and Improving Pavement Milling Operations | University of New Hampshire | 100,000 | 80,957 | 81% | | | |
| | | R1.41 | Novel Methods for Adding Rejuvenators in Asphalt Mixtures with High Recycled Binder Ratios | NCAT | 80,000 | 80,000 | 100% | | | |
| | | R1.42 | Impact of Polymer Modification on IDEAL-CT and I-FIT for Balanced Mix Design | NCAT | 100,000 | 100,000 | 100% | | | |
| | | R1.43 | Asphalt Real Time Smoothness (ARTS) for Asphalt Paving | Transtec Group | 104,021 | 103,877 | 100% | | | |
| | | R1.44 | Enhanced Entrained Air Void System Characterization for Durable Highway Concrete | TSU | 100,000 | 100,000 | 100% | | | |
| | | R1.45 | Continuous Moisture Measurement during Pavement Foundation Construction | UTEP | 100,000 | 100,000 | 100% | | | |
| | | Totals = | | | | | | \$ 4,969,303 | \$ 4,587,687 | 92.3% |

Attachment – B (NRRR Phase-2 Financial Summary and Project Invoicing) – 10/13/2023 financial Report

| NRRR Phase-2 | | | | | | |
|---|--|---|---|------------------|-------------------|--|
| TPF-5(466) National Road Research Alliance - NRRR Pooled fund | | | | | | |
| For 2023 - quarter 3 report - updated 10/13/2023 | | | | | | |
| SPR Funding | | SPR Dollars | Percent | Remaining | Comment | |
| SPR Funding | SPR - Pooled Funds (Expected from Agencies) = | | \$ 7,434,163 | 65% | | 39% of the funds still waiting to be paid into MnDOT for this pooled fund effort |
| | SPR - Pooled Funds (Received from Agencies) = | | \$ 4,797,979 | | | |
| | Non-SPR MnDOT money for Veta = | | \$ 400,000 | | | |
| | Past SPR rollover funding from Veta TPF5(334) for Veta = | | \$ 196,163 | | | |
| | (MnDOT Encumbered/EC Approved) for Projects = | | \$ 7,320,970 | 91% | | |
| SPR Invoiced (Spent) = | | \$ 1,443,453 | 19% | | | |
| MnDOT State Funds | MnDOT Construction Funding for 2022 MnROAD Construction (budgeted) = | | \$ 6,000,000 | | | |
| Partnerships | NRRR Associate funding (not included in this budget but used for NRRR needs) | | | | | Used for NRRR efforts --> MnDOT documented dollars |
| | FHWA Carbon Cure (400K) and ICT Team (188K) Partnership = | | \$ 588,000 | | | |
| Grand Total | \$14,022,163 | SPR + Construction + FHWA funding | | | | |
| SPR Dollars Budget/Spending | | | | | | |
| NRRR Focus | Project# Contract# | General Outcome / Deliverable | Vendors | EC Team Approved | Payments Invoiced | Payment Percent |
| Travel | TPF15466A | Agency travel / meals / meeting room costs | | 50,000 | 2,382 | 5% |
| Travel | TPF15466A | Registration Fee for National Concrete Consortium | 2024 Conf Session/Booth | 6,000 | | |
| Sensors | TPF15466B | MnROAD Sensors, Equipment, Shipping for 2022 studies | | 350,000 | 287,298 | 82% |
| MnROAD Labor | TPF15466C | MnROAD Staff - Labor for sensors and monitoring (5 years) | MnDOT | 800,000 | 143,168 | 18% |
| 2021 ICT Funding | BUDGET NOTE | Total Funds for ICT = \$1,971,163 (2021 NRRR Directed funding \$1,375,000 (includes FHWA 188K) then +400K MnDOT + 196,163 TPF5(334) rollover) | | | | Remaining for ICT |
| | TPF15466D 1047755 | Veta Web and Veta MDMS Standardized Platform | Transtec Group | 1,894,664.08 | 684,902 | 36% |
| 2021 General Team Funding | BUDGET NOTE | Total Funds for Non-ICT Teams = \$2,525,000 (2021 NRRR Directed funding \$2,125,000 + Missouri 400K funding) | | | | Remaining Other Teams |
| | TPF15466E 1048189 | MnROAD Reflective Cracking Challenge (NRRR) | UNH Auburn | 230,499 | - | 0% |
| | TPF15466EE | Reflective Cracking Challenge Coordination (Missouri - 400K) (400K from Missouri - not apart of the initial \$2,125,000 the EC approved) | University of Missouri-Columbia | 400,000 | - | Contract Development |
| | TPF15466F 1048190 | Use of Alternative Pozzolanic Materials Towards Reducing Cement Content in Concrete Pavements | Nichols Consulting APT | 175,000 | 41,586 | 24% |
| | TPF15466G 1048191 | Use of Carbon Dioxide for Sustainable and Resilient Concrete Pavements (400K FHWA along with construction, sensors, monitoring) | Iowa State | 150,000 | 42,704 | 28% |
| | TPF15466H 1048192 | The Use of Alternative Cementitious Materials in Concrete Pavements | Applied Pavement Technology - NCE | 150,000 | 44,251 | 30% |
| | TPF15466J 1048193 | Performance Evaluation of Wicking Geotextiles for Improving Drainage and Stiffness of Road Foundation | Michigan State Michigan Tech/ Ingios | 200,000 | 11,662 | 6% |
| | TPF15466K 1048377 | Reclamation and Recycling Techniques to Achieve Perpetual Pavements Characteristics | Braun Intertec | 150,002 | 34,115 | 23% |
| | TPF15466L 1036343(3) | Flooded Pavements Assessment App-Phase 2 | UNH | 200,234 | 21,538 | 11% |
| | TPF15466M 1048485 | Validation of Loose Mix Aging Procedures for Cracking Resistance Evaluation in Balanced Mix Design | Auburn University UNH - TTI | 100,000 | 91,069 | 91% |
| | TPF15466N 1048486 | Perpetual Pavements in Wet Freeze Climate | RFP later in Fall 2024 | 200,000 | - | RFP Soon |
| | TPF15466P 1048487 | Thinlays as a PM Treatment | Terracon | 49,918 | 38,777 | 78% |
| | TPF15466R 1048488 | Recycled Binder Availability | RFP later in 2024 | 200,000 | - | RFP Soon |
| | TPF15466S MnIT SWIFT #214249 | InfoPAVE MnROAD Database Support and Development | i-Engineering | 300,000 | - | 0% |
| | 2023 Call for Innovation | TPF15466? TBD | Automated 3DGPR Analysis for Concrete Pavement Evaluation | Infrasense | 156,794 | - |
| TPF15466? TBD | | Reducing Embodied Carbon with Mineral-Blended Polymeric Microspheres | CP Tech Center | 130,000 | - | 0% |
| TPF15466? TBD | | Hot rubber seal coating to survive wet and frozen environments | MTU | 181,912 | - | 0% |
| TPF15466? TBD | | Materials-Based Methods to Improve Rumble Strip Durability | Asphalt Materials | 110,000 | - | 0% |
| TPF15466? TBD | | Use of Recycled Materials in Pavement Preservation | Auburn University | 86,319 | - | 0% |
| TPF15466? TBD | | Effective Use of Traffic Speed Deflectometer for Network-based and Project-based Applications | UTEP | 150,000 | - | 0% |
| TPF15466? TBD | | Establishing Applicability of NDT Methods for Project-Level Evaluation | UTEP | 80,000 | - | 0% |
| TPF15466? TBD | | Improving Moisture Resistance/Control of Pavement Foundation Systems via Engineered Water Repellency | Michigan State University | 200,000 | - | 0% |
| TPF15466? TBD | | Instrumentation and data management/analyses for Measurement While Drilling (MWD) technology | MTU | 216,845 | - | 0% |
| TPF15466? TBD | | Continued Monitoring of Original I-94 Westbound Asphalt Overlay Sections and Use of Cracking and Performance Data | UNH | 74,874 | - | 0% |
| TPF15466? TBD | | Continued Monitoring of TH6 RA Field Sections | UNH | 155,408 | - | 0% |
| TPF15466? TBD | | Field Validation of Using Warm Mix Asphalt at Reduced Production Temperatures for Balanced Mix Design | Auburn University | 125,000 | - | 0% |
| TPF15466? TBD | Standardization of SIP Calculation for Hamburg Wheel Tracking Test | Auburn University | 47,500 | - | 0% | |