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**Initial Research Request**

*Date Requested (MM/DD/YYYY)*

*Insert Supporting NRRA Team Here*

Fill out all fields below.

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| **Research Title:** | **Pavement preservation approaches for lightly surfaced roadways** |
| **Developed By:** | **NRRA Preventive Maintenance Team (Tech Transfer #1b)**  **(Name)** |
| **Email:** |  |
| **Phone:** |  |

**Request Type:**

 Tech Transfer Topic(“Quick” summary or synthesis)

**Process:**

1. Teams develop an **initial topic research request** (this form) for Executive Committee review/approval.
2. Teams develop a **detailed work plan** (form will be provided) for Executive Committee review/approval to initiate funding and contract development.
3. Once approved, the funding and contract development process begins.

**Project Overview and Goals:**

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| For very low volume roads where there is a desire to provide an enhanced surface in lieu of a standard aggregate surface on a limited budget one alternative is the application of a Light surface treatment (LST). A *Lightly Surfaced Pavement Treatment*, for this report, can include the application of an asphalt surface treatment to an aggregate base as well as applying a liquid asphalt material and covering with aggregate material either having an applied thickness of about 1/2 – inch or less. These treatments are not considered structural and rely on the strength and quality of the underlying base and subbase structures.  The application of an LST is intending to preserve the underlying aggregate structure by maintaining aggregate and fines in place and shedding rain to reduce moisture effects. Maintaining the aggregate structure reduces dust as well as loss of aggregate into the roadside ditches as well as reducing surface distresses characterized as wash boarding and rutting.  LST’s are considered an economical alternative to the conventional HMA or Concrete pavement. Examples of LST’s include:   * Fog Seal with a Light Asphalt Emulsion or Bio Treatment Material * Single or double chip seal * Otta Seal * Chloride   The objective of this tech transfer project is to compile and report a synthesis of design methods NRRA Member states use for design, identify best practices, and report successful and unsatisfactory experiences with performance, case studies. |

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| **Time to Complete:** |  | **Expected Funding Required:** |
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**Expected Tasks:**

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| Task 1: Brief Literature Review  Task 2: Develop survey questions and transmit to NRRA members  Task 3: Summarize each states current activity   * Design Methods Used * LST’s typically constructed * LST cost by alternative application type * Review of LST performance * Review of Surface Maintenance alternatives |

**Potential Benefits for NRRA Members:**

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| A summary of the state-of-practice and performance information will provide state DOTs with information on the current design approach, tested and preferred alternatives and materials, and performance observations. A summary will provide NRRA states performance information relative to cost to aid in decision making.  An LST is an alternative solution that can be included in a decision for roadways and whether they should be paved or unpaved. Based upon available information provided from NRRA states recommendations for design guidance, materials usage, and cost will be summarized. |

**How Does This Build Upon Previous Research?**

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| - Lightly Surfaced Roads: Stabilized Aggregate Applications, Charles Jahren Iowa State University  - Light Surface Treatments: A Cost-Effective Middle Ground for Maintaining Low-Volume Roads, Charles Jahren Iowa State University  - Minnesota’s Experience with Thin Bituminous Treatments for, Low-Volume Roads, Greg Johnson MnDOT  - Cost Comparison of Treatments Used to Maintain or Upgrade Aggregate Roads, Greg Johnson, MnDOT  Quantification protocol for gravel and lightly surfaced road rehabilitation projects. |

**NRRA Contacts to Assist in Project (Technical Advisory Panel):**

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**REVIEW AND APPROVAL:**

Double click the signature line to the right to add your full name and NRRA team name. Both digital and handwritten signatures will be accepted.

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| **APPROVALS (SIGN AND DATE):** |
| I hereby certify sufficient staff time will be scheduled for the Project Manager and staff to complete the project as outlined in the attached work plan, and commit any Office or District funds as listed above. |
| **COMMENTS (EC USE ONLY)** |

Please send completed form to the following persons below to be submitted to the executive committee.

Ben Worel

651-366-5522

[ben.worel@state.mn.us](mailto:ben.worel@state.mn.us)

Cassandra Petersen

651-366-5593

[Cassandra.petersen@state.mn.us](mailto:Cassandra.petersen@state.mn.us)