

# Research Need Statement 638

## I. Need Statement Champions and Information

### I.A. Need Statement Champion Information

I.A.1. First and Last Name of Research Champion: **Lori Belz**

I.A.2. Research Champion's Office: **MnDOT Office of Environmental Stewardship**

I.A.3. Research Champion's Phone Number:

I.A.4. Research Champion's Email: [lori.belz@state.mn.us](mailto:lori.belz@state.mn.us)

### I.B. Research Co-Champion

I.A.1. First and Last Name of Research Co-Champion: Ken Graeve

I.A.2. Research Co-Champion's Office: MnDOT Office of Environmental Stewardship

I.A.3. Research Co-Champion's Phone Number:

I.A.4. Research Co-Champion's Email: [Kenneth.graeve@state.mn.us](mailto:Kenneth.graeve@state.mn.us)

I.C. Research Needs Title (115 Characters): **Functional Longevity of Erosion Prevention Products**

I.D. Project Sponsor: **MnDOT Research Program**

## II. Research Need Background and Description

### II.A. Research Need Background

II.A.1. Describe the problem or opportunity.

The two most common stabilization methods to control erosion and establish vegetation that MnDOT uses are Hydraulic Erosion Control Products (HECP) and Rolled Erosion Prevention Products (REPP). Specifying the best fitting product for the situation keeps MnDOT in compliance with stormwater permits and is more cost effective. Designers must specify which category of HECP or REPP to use on the project. The choice will vary by the length of time stabilization needed, the erosiveness of the site, if it is over winter, longer term projects. One important criterion for distinguishing between product categories is functional longevity, but functional longevity has no designated testing method to assure the products will last as long as the manufacturers' observations say they will last.

II.A.2. If applicable, describe how this project will build on previous research.

II.A.3. If applicable, include the title/s or previous research.

II.A.4. What is the **objective** of the proposed research?

This research would develop a standard test method for HECF and REPP functional longevity to help categorize them and give designers clearer information to select the appropriate product.

The benefits will include better identification of the most cost-effective product, allowing designers to consider life-cycle cost when selecting products, ensuring that products last the required amount of time, reducing the need to re-seed, and reducing erosion over winter and during extended soil stability timeframes.

### III. Strategic Priorities, Benefits, and Expected Outcomes

**Section III. is for MnDOT sponsored and co-sponsored projects only; all LRRB projects proceed to section IV.**

#### III.A. MnDOT Strategic Priorities

*Instructions:* Briefly describe how the project aligns with the following MnDOT Research Strategic Priorities. Complete all that apply.

III.A.1. Innovation & Future Needs:

III.A.2. Advancing Equity:

III.A.3. Asset Management: **Developing a standard test method for HECP and REPP will allow designers to consider life-cycle cost when selecting products.**

III.A.4. Safety:

III.A.5 Climate Change & Environment: **This is a current priority because of the need to update material specification to require natural fiber products instead of the current plastic-based products.**

#### III.B. Expected Outcomes

*Instructions:* Check all expected direct outcomes of this research.

- New or improved technical standard, plan, or specification
- New or improved manual, handbook, guidelines, or training
- New or improved policy, rules, or regulations
- New or improved business practices, procedure, or process
- New or improved tool or equipment
- New or improved decision support tool, simulation, or model/algorithm (software)
- Evaluation of a new commercial product
- New or improved technical standard, plan, or specification
- Other. Please specify below:

### III.C. Expected Benefits

*Instructions:* Select all expected benefits that may be realized if the findings and recommendations from this research is adopted or implemented

III.C.1. Construction Savings Choose an item.

III.C.2. Decrease Engineering/Administrative Costs **Reduced planning/design costs**  
Better identification of most cost-effective products

III.C.3. Environmental Aspects **Other environmental impact. Please describe below.**  
Improvements to erosion control and establishment of vegetation

III.C.4. MnDOT Policy Choose an item.

III.C.5. Lifecycle Choose an item.

III.C.6. Operations and Maintenance Savings **Reduced materials used**  
Reducing the need to re-seed

III.C.7. Reduce Risk Choose an item.

III.C.8. Reduce Road User Cost Choose an item.

III.C.9. Safety Choose an item.

III.C.10. Technology Choose an item.

III.C.11. Other, please describe below:

#### IV. Technical Advisory Panel

*Instructions:* Please list the name and affiliation of individuals to consider for the Technical Advisory Panel.

Your assigned Project Advisor is available to answer questions and provide guidance (assigned by the Office of Research & Innovation).

Your Project Advisor is: **Marcus Bekele, (651)366-3903, [marcus.bekele@state.mn.us](mailto:marcus.bekele@state.mn.us)**