



RESEARCH NEED STATEMENT

Call for Projects 2015

Project Research Title: Performance Base Testing for Erosion Prevention and Sediment Control (EPCS) Devices

TDOT Sponsor Director: Jennifer Lloyd

List TDOT Research Team Lead: Ali Hangul

List TDOT Research Team Members:

Darrell Bost, Construction HQ, Specifications Office

Greg Russell, Environmental Division, Comprehensive Inspection Office

Danny Lane, Research Office, Materials and Test Division HQ

Michael Cloud, Maintenance, Operations Division

1. Define the problem or research requested. What is the goal/objective of the research?

The objective of this project is to test the current EPSC devices per NTPEP, National Transportation Product Evaluation Program. <http://www.ntpep.org/Pages/default.aspx>

The goal is to provide performance based cost effective design criteria.

2. Is this research a continuation of a past or present project?

No Yes

If yes, provide current research project title, RES # and reason for the project continuation.

Partial continuation of a previous research project, monitoring sediment discharges of five TDOT construction sites (two on SR-840) led by Environmental Division and USGS.

3. Describe anticipated benefits/expected deliverables.

Extensive cost savings compared to current practices. Research will provide valuable design input for common devices so a designer can develop erosion plans with targeted sediment discharge goals.

4. What is your timeline for completion of the research?

One year

5. List the anticipated tasks for this research.

Product selection

Categorization (erosion prevention vs. sediment control)

Hydraulic laboratory testing

Reorganize roadway standard drawings and products listed on Qualified Product List.

6. Describe how the project results will be implemented?

Results will be implemented on every roadway design project

7. Will this study produce software, web page or other technology that will involve the Information Technology Division?

No Yes, please describe:

8. Will training be provided to employees as a result of this research?

No Yes, please describe:

9. Will this research involve equipment or materials purchase?

No Yes, please describe:

10. Research must support the Long Range Transportation Plan Policy Recommendations **and/or** TDOT Operational Goals and/or Strategic Initiative. (*See attachments for additional information*)
Please indicate which categories the research will support:

Transportation Long Range Plan Policy Recommendations

(A) Accessibility

(B) Safety, Security, and Transportation Resilience

(C) Coordination, Cooperation, and Consultation

(D) Demographic and Employment Changes and Trends

(E) Freight Logistics and Planning

(F) Financial

(G) Mobility

(H) Travel Trends and System Performance

TDOT Operational Goals and/or Strategic Initiative

(A) Deliver transportation projects on schedule and within budget

(B) Maintain the state transportation system to protect the long term investment in our infrastructure assets

(C) Operate and manage Tennessee's transportation system to provide a high level of safety and service to our customers and workers

(D) Expanding mobility choices to maximize access

(E) Dramatically change the paradigm for delivery of transportation products and service to improve the efficiency and effectiveness of Tennessee's transportation network

11. Please explain how the research supports the Long Range Transportation Plan Policy Recommendations **and/or** TDOT Operational Goals and/or Strategic Initiative selected above:

Current practices to prevent erosion and control sediment are based on primitive criteria. With this research the department will be able to design cost effective erosion plans. It is important to know the performance of such devices so temporary erosion control can be designed to meet desired values. This research is also supported by the EPSC Policy Committee. Outcome of this research will directly benefit not only the Design Division but, the Environmental, Materials and Test, and Construction Divisions as well.

For additional information, please contact:

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