

## TRANSPORTATION POOLED FUND PROGRAM QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Virginia DOT (VDOT)

**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.*

<p><b>Transportation Pooled Fund Program Project #</b> (i.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX))</p> <p><b>TPF-5(345) Pavement Surface Properties Consortium – A Research Program at the Virginia Smart Road Phase II</b></p>	<p><b>Transportation Pooled Fund Program - Report Period:</b></p> <p><input type="checkbox"/> Quarter 1 (January 1 – March 31)</p> <p><input type="checkbox"/> Quarter 2 (April 1 – June 30)</p> <p><input type="checkbox"/> Quarter 3 (July 1 – September 30)</p> <p><input checked="" type="checkbox"/> Quarter 4 (October 1 – December 31)</p>	
<p><b>Project Title:</b></p> <p style="text-align: center;"><b>Pavement Surface Properties Consortium: A Research Program</b></p>		
<p><b>Name of Project Manager(s):</b> Kevin Kenneth McGhee</p>	<p><b>Phone Number:</b> (434) 293-1956</p>	<p><b>E-Mail</b> <a href="mailto:Kevin.McGhee@VDOT.Virginia.gov">Kevin.McGhee@VDOT.Virginia.gov</a></p>
<p><b>Lead Agency Project ID:</b> 82650</p>	<p><b>Other Project ID (i.e., contract #):</b></p>	<p><b>Project Start Date:</b> 5/19/2016</p>
<p><b>Original Project End Date:</b> 2/28/2022</p>	<p><b>Current Project End Date:</b> 2/28/2022</p>	<p><b>Number of Extensions:</b> --</p>

Project schedule status:

- On schedule     
 On revised schedule     
 Ahead of schedule     
 Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
\$418,500*	\$36,372	9%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$8,934 (2%)	\$8,934	9%

\* Committed; the actual contracted budget is \$70,222

## Project Description:

Through a regional pooled fund, this program of research focuses on optimizing pavement surface texture characteristics. Phase I of the program demonstrated that a collaborative research program can provide an accessible and efficient way for highway agencies and other organizations to conduct research on pavement surface properties. This second phase will focus on addressing some of the emerging challenges in the evaluation of pavement surface properties and the changes needed to best support the next generation of pavement asset management systems, including support for MAP21-related initiatives. It will also seek participation of industry through traditional membership or an industrial affiliate program. The program includes the following main broad activities:

- ✓ Equipment Rodeos: continue equipment comparisons by hosting the annual equipment roundups and provide consortium members with a forum for discussion of common challenges, and a unique opportunity to seek solutions for these challenges, learn from each other, and be exposed to emerging practices and technologies.
- ✓ Technology Transfer: The Consortium will continue to support the development of a body of knowledge in pavement surface characteristics and vehicle-road interaction and facilitate the transition from research to practice of new and existing methods and technologies for measurement of functional highway surface properties and enhanced pavement surfaces.
- ✓ Research on Emerging Topics: the consortium provides a unique opportunity to conduct specific studies of common interest that require measurement of pavement surface properties under controlled traffic and/or environmental conditions on different types of road surfaces. Examples of potential topics include: Evaluation of emerging 3D systems, new methods for characterizing macrotexture, and implications for FAST act requirements on current practices.

## Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):

- The Annual TAC meeting was held on Tuesday November 1, 2015 before the start of the RPUG 2016 conference in San Diego.
  - Kevin McGhee made a presentation to discuss with the members of the consortium the new proposal to refocus the goals of the consortium. This proposal seeks the possible participation of other member states that have expressed their willingness to join the consortium if the focus is centered more on Pavement Friction Management.
  - All the members of the TAC expressed their support to the proposal, agreed that Kevin should make the presentation in RPUG, and expect that the Consortium can attract new members.
- A presentation was made during RPUG 2016 to announce the new orientation of the pooled fund so agencies interested in participating can begin the process to join the pooled fund.
- Prepared a poster “Continuous Friction Measurement Equipment as Tool for Improving Crash Rate Prediction: Pilot Study,” which has been accepted for TRB in 2016 on behalf of the standing committees of the TRB Technical Activities Division and will be presented as part of the State Department of Transportation High-Value Research Projects which highlight the top High Value research projects from various State DOTs. Top projects are solicited and only sixteen are selected from each of the four AASHTO Regions. These posters represent successful implementation of research projects by Transportation Agencies.

## Anticipated work next quarter:

- Participate in the *96<sup>th</sup> Annual Meeting of the Transportation Research Board*, January 8-12, 2017 in Washington, D.C.
  - Edgar de León Izeppi will provide an update on the Task Group III Texture Measurement and Use report at the AFD90 Standing Committee on Surface Properties – Vehicle Interaction during the TRB Annual Meeting.
  - Edgar de León Izeppi and Kevin McGhee will present the poster indicated above.
  - Gerardo Flintsch will make an invited presentation at the ISAP TC on Constitutive Modelling: 2017 Yearly Meeting.
- Start the organization of the *11<sup>th</sup> Annual Surface Properties Rodeo* to be held in Blacksburg on June 6-10, 2017 at the Smart Road. Preparations will begin with the partners and seeking invited representatives/equipment from other states/organizations.
- Finalize the draft report summarizing the results of the *10<sup>th</sup> Annual Surface Properties Rodeo* and distribute it for review. The research team will summarize the processing of the friction and the profile data collected in May 2016 in Blacksburg.

**Significant Results:**

- The final version of the following papers, which report on research partially supported by the consortium, have been published in 2016 in the Journal of the Transportation Research Board:
  - McCarthy, R., Flintsch, G.W., Katicha, S., McGhee, K. and Medina-Flintsch, A. “A New Approach for Managing Pavement Friction and Reducing Road Crashes,” *Journal of the Transportation Research Board*, 2016, vol. 2591, pp. 23-32.
  - Mogrovejo, D., Flintsch, G.W., Katicha, S.W., de León Izeppi, E.D., and McGhee, K.K., “Enhancing Pavement Surface Macrotecture Characterization by Using the Effective Area for Water Evacuation,” *Journal of the Transportation Research Board*, 2016, vol. 2591, pp. 80-93.
  - McGhee, K.K., de León Izeppi, E.D., Mogrovejo, D.E., and Flintsch, G.W., “Virginia “Quieter” Pavement Demonstration Program,” *Journal of the Transportation Research Board*, 2016, vol. 2571, pp. 49-58.
  - de Leon Izeppi, E., Katicha, S., Flintsch, G.W., and McGhee, K. “Pioneering the use of continuous pavement friction measurements to develop new Safety Performance Functions, improve the accuracy of crash count predictions, and evaluate possible treatments for the roads in Virginia.” *Journal of the Transportation Research Board*, 2016, vol. 2583, pp. 81-90.

**Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might the completion of the project within the time, scope and fiscal constraints set forth in the agreement, along with recommended solutions to those problems).**

No problems were encountered in this quarter.

**Potential Implementation:**