

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.

Transportation Pooled Fund Program Project # <i>(i.e., SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX))</i> TPF-5(268) National Sustainable Pavement Consortium		Transportation Pooled Fund Program - Report Period: <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input checked="" type="checkbox"/> Quarter 2 (April 1 – June 30) <input type="checkbox"/> Quarter 3 (July 1 – September 30) <input type="checkbox"/> Quarter 4 (October 1 – December 31)	
Project Title: <div style="text-align: center;">National Sustainable Pavement Consortium</div>			
Name of Project Manager(s): Kevin Kenneth McGhee		Phone Number: (434) 293-1956	E-Mail Kevin.McGhee@VDOT.Virginia.gov
Lead Agency Project ID: VCTIR 103567		Other Project ID (i.e., contract #): 448679	Project Start Date: 7/1/2012
Original Project End Date: 6/30/2018		Current Project End Date: 12/31/2019	Number of Extensions: 4

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
\$690,000 ¹	\$614,979	89%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$2,340 (<1%)	\$2,340	89%

¹ Total available funds; \$684,244 contracted.

Project Description:

Through a regional pooled fund, this program of research focuses on enhancing pavement sustainability. The initial project scope covers:

- ✓ Examine emerging sustainable materials, technologies, products and pavement systems, how to facilitate their adoption, and what testing approaches and methods are needed to implement these technological improvements.
- ✓ Identify an appropriate set of metrics that comprises all aspects of pavement sustainability and the adaption or development of tools designed to assess pavement sustainability on qualitative and quantitative scales.
- ✓ Examine how sustainability considerations will affect all aspects of pavement engineering and management such as planning, design, construction, maintenance, management, and reclamation and develop guidelines for integration of these tools into pavement/ asset management business processes.
- ✓ Investigate the effect of climatic change on regional pavement engineering in terms of design, construction, maintenance, and management.

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

- Continued to work on the synthesis about long-term performance of in-place recycled pavements.
- Continued to work on the update of the LCA software developed earlier in the project, in collaboration with University of Twente.
- Continued to support the organization of the *International Symposium on Pavement, Roadway, and Bridge Life Cycle Assessment 2020* (LCA 2020), in Sacramento, California, USA, June 3-6, 2020.
- Prepared and submitted the following papers based on the work conducted in the previous cycles:
 - Qiao, Y., Dawson, A., Parry, T., Flintsch, G.W., “Life Cycle Cost of Flexible Pavements and Climate Variability: Case Studies from Virginia.” *Structure and Infrastructure Engineering*.
 - Qiao, Y., Santos, J., Stoner, A., Flintsch, G.W., “Climate Change Impacts on Asphalt Road Pavement Construction and Maintenance: An Economic Life Cycle Assessment of Adaptation Measures in the State of Virginia, U.S.,” *Journal of Industrial Ecology*.

Anticipated work next quarter:

- Continued to work on the revisions to the synthesis about long-term performance of in-place recycled pavements and prepare a paper based on this work.
- Continue to work on software update.

Significant Results:

- ✓ Qiao*, Y., Dawson, A., Parry, T., Flintsch, G.W., “Life Cycle Cost of Flexible Pavements and Climate Variability: Case Studies from Virginia.” *Structure and Infrastructure Engineering, Maintenance, Management, Life-Cycle Design and Performance*, (accepted 08 2019, published online: 27 Jul 2019). <https://doi.org/10.1080/15732479.2019.1642364>

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: