

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 checked="" type="checkbox"/> Quarter 1 (January 1 – March 31) <input 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): Ben Bowers		Phone Number: (434) 293-1423	
Lead Agency Project ID: VCTIR 103567		Other Project ID (i.e., contract #): 448679	
Original Project End Date: 6/30/2018		Current Project End Date: 6/30/2018	
		E-Mail Ben.Bowers@vdot.virginia.gov	
		Project Start Date: 7/1/2012	
		Number of Extensions: 2	

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
\$558,944 ¹	\$510,711	91%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$38,183 (7%)	38,183	91%

¹ Contracted; total commitment \$665,000

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 work on the use of LCA in pavement-type selection and integration of sustainability into network-level PMS.
- Continued work on synthesizing long-term performance data from states with active in-place recycling programs.
- Presented two papers at the *Transportation Research Board 96th Annual Meeting*, Jan 7-11, 2017:
 - ✓ “Non-Destructive In Situ Characterization of Elastic Moduli of Full-Depth Reclamation Base Mixtures.”
 - ✓ “Comparison of Life-Cycle Assessment Tools for Road Pavement Infrastructure.”
- Prepared a paper for the *World Conference on Pavement and Asset Management*, Baveno, Italy, June 12-16, 2017.

Anticipated work next quarter:

- Continue work on the integration of sustainability into network-level PMS.
- Continue work on synthesizing long-term performance data from states with active in-place recycling programs.
- Document the results in two conference papers.

Significant Results:

Published the following peer-reviewed papers:

- ✓ Santos, J., Ferreira, A., Flintsch, G.W., Cerezo, V. “A Multi-objective Optimization Approach for Sustainable Pavement Management,” in *Life-Cycle of Engineering Systems: Emphasis on Sustainable Civil Infrastructure*, 2017, CRC Press, Taylor & Francis, doi: [hal-01459669](https://doi.org/10.1080/10298436.2016.1176164).
- ✓ Qiao, Y.; Dawson, A.; Parry, T.; Flintsch, G.W. (2016). Immediate effects of some corrective maintenance interventions on flexible pavements. *International Journal of Pavement Engineering*, 2016, Taylor & Francis, doi: [10.1080/10298436.2016.1176164](https://doi.org/10.1080/10298436.2016.1176164).

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: