

# Low Carbon Asphalt Mixtures and Sustainable Flexible Pavements: Where Do We Stand, and How Can We Improve?

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**WED., MARCH 27 | 2 – 3:15 P.M. (CDT)**

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1 PDH Provided | Hosted via Teams

## ABSTRACT

Climate change mitigation efforts are expected to lead to the incorporation of environmental impact considerations into material procurement and project selection decisions. In the transportation industry, there is great focus on reducing the embodied carbon of construction materials. This has led to the recent advocacy for the generation of Environmental Product Declarations (EPDs) for construction materials and products. With continued advocacy, more and more agencies are likely to start developing specifications targeting low-carbon construction materials. To determine where to draw the line with respect to acceptance/compliance limits defining low-carbon construction materials, benchmarking is important. Recently, the General Services Administration (GSA) recommended threshold values based on the Interim Inflation Reduction Act (IRA) Low Embodied Carbon Material Requirements for concrete, asphalt, glass, and steel. However, enforcing the same threshold values across the nation is not appropriate as region-specific factors may play a vital role in influencing a material's environmental impact. Ongoing research at Oklahoma State University is focused on evaluating methodologies that can be used to develop region-specific benchmark global warming potential values for asphalt mixtures. Moreover, the research team is working on exploring different alternatives that can help reduce the environmental impacts of asphalt mixtures and flexible pavements. This presentation will discuss findings from this ongoing work and will outline future tasks that should be undertaken to promote low carbon asphalt and sustainable flexible pavements.

## BIO

Dr. Debakanta (Deb) Mishra is an Associate Professor in the School of Civil and Environmental Engineering at Oklahoma State University, where he teaches courses in the areas of geotechnical engineering, pavement engineering, and railroad engineering. He joined OSU in August 2019 after spending five years as an Assistant Professor in the Civil Engineering Department at Boise State University. Prior to that he completed his Ph.D. and post-doctoral work at the University of Illinois at Urbana-Champaign. Deb has research interests in the generic areas of Infrastructure Materials, Pavement Engineering, Railroad Engineering, and Transportation Geotechnics. Deb serves as an active member of several TRB and ASCE committees and served as the chair of the TRB Unbound Granular Material Sub-Committee from 2016 until 2022. He currently serves as the Committee Research Coordinator for TRB's Aggregates Committee (AKM80). He also serves as an Associate Editor for ASCE's Journal of Materials.

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