



Kansas LTAP Fact Sheet

A Service of The University of Kansas Transportation Center for Road & Bridge Agencies

New Guide on Sustainable Concrete

By Lisa Harris

Sustainable concrete pavement is a complicated technical topic—starting with establishing a definition of pavement sustainability to covering the many different sustainable technologies developed for the many different stages in the production of concrete pavement. We can't do justice to this topic in one newsletter article.

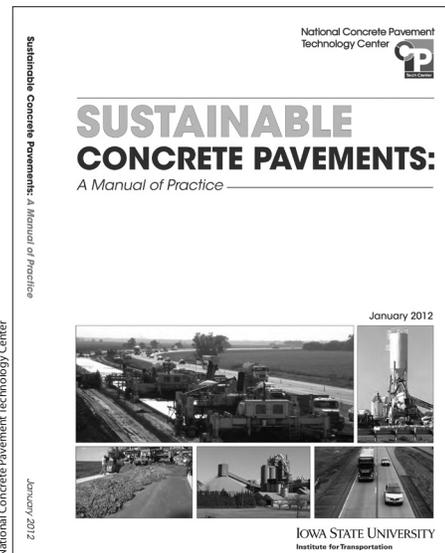
Luckily, there is an excellent new resource that covers this topic in depth. *Sustainable Concrete Pavements: A Manual of Practice* is a 114-page resource available to download for free. Developed by the National Concrete Pavement Technology Center at Iowa State University, it covers the topic of sustainable concrete in a well-organized and easy-to-read manner.

The manual provides practical guidance for adopting sustainable technologies for new concrete pavements. It also covers sustainable solutions for rehabilitating existing pavements. Costs and benefits of sustainable technologies and materials are also discussed.

The manual is aimed at the different individuals and agencies that contribute to decisions and practices related to constructing sustainable pavement in a community, such as elected officials, engineers, material suppliers, and contractors.

The manual covers:

- Definition / concepts of pavement sustainability;



- Concrete design attributes that contribute to sustainability, including extended service designs and two-lift construction (with an example from KDOT);
- Materials design, including use of geopolymers and recycled materials in the mix, the use of precast concrete pavements and thin pavements, and longevity as a component of sustainability;
- Sustainable aspects of the construction process, including energy consumption, water use, and generation of noise and particulate matter;
- The impact of roughness/smoothness on fuel consumption;
- Surface reflection and heat generation;
- Sustainable preservation and rehabilitation strategies, focusing on diamond grinding and concrete overlays;
- Pavement recycling strategies;
- Assessment methods for pavement sustainability, including the Greenroads™ rating system.

If your community would like to investigate options in sustainable concrete pavement, this publication is for you. It will be updated regularly to reflect evolving understandings of issues related to enhancing concrete pavement sustainability. Download it for free at the link below. ■

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Sources:

- Sustainable Concrete Pavements: A Manual of Practice. National Concrete Pavement Technology Center, 2012. http://www.cptechcenter.org/publications/Sustainable_Concrete_Pavement_508.pdf