



CP Road Map E-News January 2011

The **CP Road Map E-News** is the newsletter of the [Long-Term Plan for Concrete Pavement Research and Technology \(CP Road Map\)](#), a national research plan developed and jointly implemented by the concrete pavement stakeholder community. To find out more about the CP Road Map, or to get involved, contact Dale Harrington, dharrington@snyder-associates.com, 515-964-2020.

New Moving Advancements into Practice (MAP) Brief

Moving Advancements into Practice (MAP) Briefs describe promising research and technologies that can be used now to enhance concrete paving practices.

[MAP Brief 3-1: SmartCure: An Integral Part of an Intelligent Construction System](#) has recently been published under [CP Road Map Track 3: High-Speed Nondestructive Testing and Intelligent Construction](#).

[Download MAP Brief 3-1](#) (849 kb pdf).



News from the Road

News from the Road highlights research around the country (and, in this issue, around the world) that is helping the concrete pavement community meet the research objectives outlined in the CP Road Map.

ACPA publishes mechanistic-empirical tie bar design approach for concrete pavements

The American Concrete Pavement Association (ACPA) recently published a report by Applied Research Associates that guides readers through a mechanistic-empirical (M-E) design process for tie bars at longitudinal joints. The method applies to pavements in which two, three, and four 12-ft wide lanes are tied together and considers the effects of various subbase materials.

[Click here to download the full report.](#)

This project is meeting needs identified in [CP Road Map Track 2: Performance-Based Design Guide for New and Rehabilitated Concrete Pavements](#).

Texas conducts evaluation of M-EPDG with TxDOT rigid pavement database

The Texas Department of Transportation (TxDOT) initiated the rigid pavement database project to collect information on the performance of portland cement concrete pavements. A recent TxDOT research report documents efforts to collect performance information on 27 sections of pavement located throughout the state. The purpose of this work was to calibrate the Mechanistic-Empirical Pavement Design Guide (M-E PDG) punchout model. The results of this work suggest that Texas' existing pavement management information system (PMIS) data may be reporting the cause of punchouts incorrectly. This theory, as discussed in the report,



is based on the discrepancy between M-E PDG predicted punchouts and actual punchouts per the PMIS.

[Click here to access the report.](#)

This work is meeting research needs identified in [CP Road Map Track 2: Performance-Based Design Guide for New and Rehabilitated Concrete Pavements](#).

FHWA publishes tech brief on precast, prestressed concrete pavements

The Federal Highway Administration (FHWA) recently published a TechBrief on precast, prestressed concrete pavements for new construction and rehabilitation of existing asphalt pavements. The TechBrief is an eight-page document that provides a summary of precast, prestressed concrete pavements; describes field trial experiences; and discusses recommendations for best practices.

[Click here to download the TechBrief.](#)

This project is contributing to research objectives outlined in [CP Road Map Track 7: High-Speed Construction and Rehabilitation](#) and [Track 11: Concrete Pavement Business Systems and Economics](#).

PCA releases updated *Design and Control of Quality Concrete Mixtures*

The Portland Cement Association (PCA) recently released a new, fully revised 15th edition of its well-known reference book *Design and Control of Quality Concrete Mixtures*. This edition highlights the many advances that have occurred in the past decade while providing a concise, current reference on the fundamentals of concrete technology and construction. This manual benefits ready-mixed concrete producers, concrete contractors, material suppliers, architects, engineers, builders, and students.

To order this publication from the PCA bookstore, [click here](#).

This project is meeting needs identified in [CP Road Map Track 1: Performance-Based Concrete Pavement Mix Design System](#).



Cement and Concrete Aggregates Australia publishes *Use of Recycled Concrete Aggregates in Construction*

Cement and Concrete Aggregates Australia recently published *Use of Recycled Concrete Aggregates in Construction*. This 25-page publication introduces readers to a variety of aggregate types categorized as manufactured and recycled aggregates. These aggregate types include foamed blast furnace slag, fly ash aggregates, recycled concrete aggregates, and reclaimed aggregates. While not specific to concrete pavements, this document does provide useful information on a variety of recycled materials that have a potential for use in concrete mixtures. Typical applications (e.g., surface, base, and subbase) and associated limitations are provided.

[Click here to download *Use of Recycled Concrete Aggregates in Construction*.](#)

This document is contributing to research objectives outlined in [CP Road Map Track 12: Advanced Concrete Pavement Materials](#) and [Track 13: Concrete Pavement Sustainability](#).

Updates from the States: Virginia

The Virginia Department of Transportation (VDOT) research is managed by the Virginia Center for Transportation Innovation and Research (VCTIR). VCTIR (previously known as the Virginia Transportation Research Council or VTRC) performs in-house research as well as engages in partnerships with universities and other DOT's to accomplish VDOT research goals. One of these partnerships includes the Virginia Tech Transportation Institute (VTTI).



VTTI is one of the original FHWA/Federal Transit Administration Intelligent Transportation Systems Research Centers of Excellence and is home to VDOT's Smart Road. The Smart Road is described as a test-bed research facility where projects such as the Pavement Surface Properties Consortium are currently being conducted. The Pavement Surface Properties Consortium project is a transportation pooled fund project that includes support from three other states FHWA; it is an example of how VDOT works with other states to meet research needs.

[Read on for more information about concrete pavement research in Virginia...](#)

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Newsletter archives

- November 2010
- [October 2010](#)
- [September 2010](#)
- [August 2010](#)
- [July 2010](#)
- [June 2010](#)
- [May 2010](#)
- [April 2010](#)

The [National Concrete Pavement Technology Center](#) at [Iowa State University](#) provides operations support services to the CP Road Map program.

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