CP Road Map E-News September 2010

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 technologies that can be used now to enhance concrete paving practices.

MAP Brief 8-1: Roller-Compacted Concrete Pavements has recently been published under CP Road Map Track 8: Long-Life Concrete Pavements. This MAP Brief provides an introduction to roller-compacted concrete and its many paving applications.

Download MAP Brief 8-1 (387 kb pdf).

News from the Road

News from the Road highlights research around the country that is helping the concrete pavement community meet the research objectives outlined in the CP Road Map.

Indiana evaluates in situ stiffness of subgrade by resilient and FWD modulus

In a recent project conducted by Purdue University for the Indiana DOT, the resilient modulus values of subgrade materials (as determined by laboratory testing methods) were compared to values calculated from falling weight deflectometer (FWD) testing. The study concluded that the modulus values obtained by FWD methods were approximately twice as high as those obtained through laboratory testing, and that these values were affected by seasonal changes. This study enabled the Indiana DOT to develop a more accurate approach for characterizing the subgrade layer when using Mechanistic-Empirical Pavement Design Guide software.

Click here to read the full report.

This project is contributing to research objectives identified in CP Road Map Track 2: Performance-Based Design Guide for New and Rehabilitated Concrete Pavements.

Wisconsin DOT evaluates dowel bar retrofit performance

The Wisconsin DOT recently evaluated the use of a dowel bar retrofit rehabilitation technique for faulted concrete pavement slabs. Two test sections, one built in 1999 and one built in 2001, were monitored until 2007 as part of this project. The study concluded that dowel bar retrofitted sections exhibited overall lower International Roughness Index values and better load transfer efficiency values than non-doweled sections. Conclusions documented in the report, *Dowel Bar*

Retrofit Performance in Wisconsin, also suggest that mortar fill material must be mixed, placed, and cured properly in order for DBR techniques to be most efficient.

Click here to read the full report.

Work on this project is meeting a need identified under CP Road Map Track 6: Innovative Concrete Pavement Joint Design, Material, and Construction.

Iowa research investigates ways to improve concrete overlay construction

The National Concrete Pavement Technology Center recently released a report documenting the evaluation of several concrete overlay construction projects in Iowa. The goal of the research was to investigate potential alternative construction methods and materials to reduce cost and minimize construction time for concrete overlays. Recommendations on the use of GPS-controlled saws, GPS pavement surface mapping, milling techniques, slipform paver machine controls, geotextile bond breakers, concrete strength for opening to traffic, traffic control, overlay construction timing, and FWD testing are offered in the conclusions section of the report, *Improving Concrete Overlay Construction*.

Click here to read the full report.

This project is an example of work done under CP Road Map Track 7: High-Speed Concrete Pavement Rehabilitation and Construction.

Ministry of Transportation Ontario report quantifies pavement sustainability for Ontario highways

A recent report from the Ministry of Transportation Ontario (MTO) and the University of Waterloo Centre for Pavement and Transportation Technology identifies current sustainable pavement materials and technologies, recommends indicators by which sustainability can be quantified, and evaluates potential improvements with regard to sustainability at a network level. The goal of the report, *Quanitifying Pavement Sustainability for Ontario Highways*, was to develop a framework that could be implemented by the MTO for the purpose of quantifying sustainability.

Click here to read the full report.

This work is contributing to CP Road Map Track 13: Concrete Pavement Sustainability.

Ready Mixed Concrete foundation investigates effect of pavement type on fuel consumption and emissions

The Ready Mixed Concrete Research & Education Foundation recently published a report that compares fuel consumption and CO2 emissions of a vehicle traveling on a hot-mix asphalt pavement surface to those of a vehicle traveling on a concrete pavement surface. Results of this study suggest that traveling on a concrete pavement surface results in reduced fuel consumption and CO2 emissions.

Click here to read the full report.

This work is an example of CP Road Map Track 13: Concrete Pavement Sustainability. To read more about the testing procedures and results, click on the following link.

Updates from the States: Minnesota

Minnesota highway research is conducted by the Minnesota Department of Transportation (Mn/DOT) Materials and Road Research division. To achieve its research goals, Mn/DOT collaborates with the following organizations:

- Local Road Research Board (LRRB)
- Transportation Engineering and Road Research Alliance (TERRA)
- University of Minnesota Center for Transportation Studies (CTS)
- Institute for Transportation at Iowa State University (InTrans)
- National Concrete Pavement Technology Center at Iowa State University

Minnesota highway research efforts focus on four main topics:

- MnROAD, a test track constructed for evaluating pavement materials, design, and construction
- Pavement surface characteristics
- Intelligent compaction
- Ground penetrating radar

Read on for more details on Minnesota's research efforts.

Newsletter archives

- August 2010
- July 2010
- June 2010
- May 2010
- April 2010

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