CP Tech Center Technology Transfer Products/Deployment

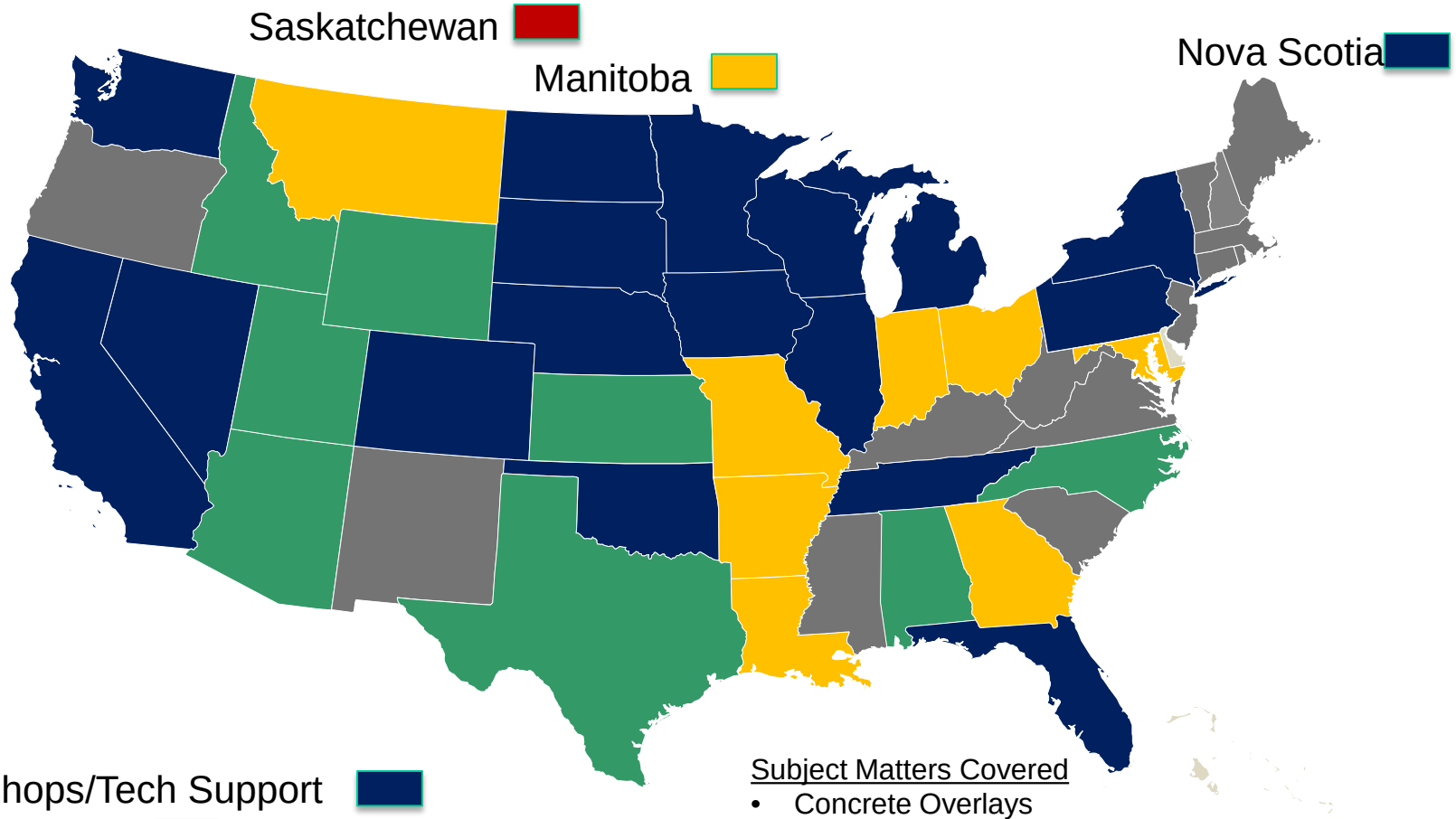
August 29, 2016

Tech Center

Training & Technical Assistance

Tech Center

2015/2016 CP Tech Center Technology Presentations & Workshops



48 Workshops/Tech Support
13 Tech Support
10 Webinars
40 Presentations
2 Terra Member Web-based Training
108 Total (average over 6 events per month)

Subject Matters Covered

- Concrete Overlays
- Concrete Pavement Preservation
- Performance Engineer Mixes
- 3D Engineered Models
- Inspectors Training
- Joint Performance
- Pavement Foundation Support Layers
- CP Tech Center Activities
- Real Time Smoothness

Recycled Concrete Aggregate and Internal Curing Webinars

- Webinars on recycling of concrete pavements were held in four regions of the United States in April and May 2016.
- The webinars will also be presented on October 19 and November 16, 2016.
- Webinars on internal curing were held in four regions of the United States in March and April 2016.
- The webinar will is also being presented on October 12 and November 10, 2016, for anyone interested in attending.

Tech Center

Real-Time Smoothness Open House

- First workshop held in Salt Lake City, Utah – August 9, 2016,
  9 state DOTs, 50 people.
- Attendees heard from users of RTS technology and how it can help contractors to achieve pavement smoothness requirements.
- Attendees observed RTS technology in action with a site visit to paving project utilizing an RTS system.

Tech Center

Recent Technical Documents

- Guide Specification for Concrete Overlays
- Field Study of Penetrating Sealers (final report)
- Conclusion from Investigation of Deterioration of Joints in Concrete Pavements (final report)
- Comparison of Setting Time Measured Using Ultrasonic Wave Propagation with Saw-Cutting Times on Pavements (final report and T2 summary)

Tech Center

CP Road Map

E-News

- Bi-monthly newsletter highlighting research in the PCC paving industry
- Each newsletter includes:
  - Research summaries
  - Called ***News from the Road***
  - MAP Brief

CP ROAD MAP
shaping the future of concrete pavement

www.cproadmap.org

May 2016
ROAD MAP TRACK 8

PROJECT TITLE
Performance of Thin Roller Compacted Concrete Pavement under Accelerated Loading

TECHNICAL WRITER
Tyson Rupnow

EDITOR
Sabrina Shields-Cook

SPONSORS
Federal Highway Administration
National Concrete Consortium

MORE INFORMATION
Tyson Rupnow
Senior Concrete Research Engineer
Louisiana Transportation Center
(225)767-9131
tyson.rupnow@la.gov

The Long-Term Plan for Concrete Pavement Research and Technology (CP Road Map) is a national research plan developed and jointly implemented by the concrete pavement stakeholder community. Publications and other support services are provided by the Operations Support Group and funded by the Federal Highway Administration.

Moving Advancements into Practice (MAP) Briefs describe innovative research and promising technologies that can be used now to enhance concrete paving practices. The May 2016 MAP Brief provides information relevant to Track 8 of the CP Road Map: Concrete Pavement Construction, Reconstruction, and Overlays.

This MAP Brief is available at www.cproadmap.org/publications/MAPbriefMay2016.pdf.

"Moving Advancements into Practice"
MAP Brief May 2016

Best practices and promising technologies that can be used now to enhance concrete paving

Performance of Thin Roller Compacted Concrete Pavement under Accelerated Loading

Definition

RCC is broadly defined as a stiff, low-water concrete that is mixed and placed at a no-slump consistency, then compacted with vibratory rollers. RCC has similar strength properties and consists of the same basic ingredients as conventional concrete—well-graded aggregates, cementitious materials, and water—but has different mixture proportions. The major difference between RCC mixtures and conventional concrete mixtures is that RCC has a higher percentage of fine aggregates, which allows for tight packing and consolidation. RCC is a durable, economical, low-maintenance material for many pavement applications. It has been used for pavements carrying heavy loads in low speed areas because of its relatively coarse surface. However, in recent years its use in commercial areas and for local streets and highways has been increasing.

Why the interest in thin RCC pavements?

Traditionally, RCC pavements have been built on the order of 8–12 in. thick. With the increasing use of ports, intermodal facilities, shale gas exploration, agricultural activities, and logging activities (figures 1-3) on the low volume roadways, the Louisiana Department of Transportation and Development (LADOTD) and the Louisiana Transportation Research Center (LTRC) are interested in thin applications of RCC on the order of 4–8 in. thick.

Figure 1. Fracking tanker

Figure 2. Rural road with extreme fatigue cracking due to shale gas exploration

Figure 3. Heavily overloaded timber truck

CP Road Map Briefs

Completed since September 2015

- March 2016 - Concrete Pavement Recycling
- May 2016 - RCC Accelerated Loading Project
- August 2016 - Real-time Smoothness

Currently planned for 2016-2017 (quarterly)

- November - Mitigating Bridge Deck Cracking
- February 2017 – Suggest PEM
- Any other topic suggestions?

Tech Center

Future Technical Documents/Training

- Full-Depth Reclamation of Asphalt Pavements with Cement - Spring 2017
- PEM Guide Specifications - 2017
- Investigation of Deterioration of Joints in Concrete Pavements - Fall 2016
- Implementation of Thin Bonded Concrete Overlays of Asphalt (BCOA) - Summer 2017

Tech Center

Technical Products Approved by the TTCC in Columbus, Ohio for 2016/2017

Tech Center

Technical Products Approved by the TTCC for 2016/2017

1. Inspector Training for Concrete Pavement

   - Develop a 3-part webinar series of 2 hours each for a total of 6 hours. (This will take the course developed under the Co-op and turn it into a webinar series.)

   - Provide inspector checklists. (These are to be developed under the Co-op.)

Tech Center

Technical Products Approved by the TTCC for 2016/2017

2. Mitigating Bridge Deck Cracking

   - Develop an overall tech brief on approaches to mitigate bridge deck cracking.

   - Internal curing (IC), fibers, special cements, SRAs, and proper mixture proportioning.

   - The IC tech brief is complete, as well as the webinar, and the spec is under development.

   - The focus should be on cost and performance history of the different options, if possible.

Tech Center

Technical Products Approved by the TTCC for 2016/2017

3. Using Fiber in Bridge Decks

- Develop a software tool for calculating fiber dosage rates
- Develop a tech brief on this topic – 6 ± pages
- Provide specifications guidance
- Develop a 90-minute webinar

Tech Center

Technical Products Approved by the TTCC for 2016/2017

4. Using fibers in Thin Concrete Overlays

- Develop a software tool for calculating fiber dosage rates
- Develop a tech brief on this topic –6 pages ±
- Provide specifications guidance
- Develop a 90 minute webinar

Tech Center